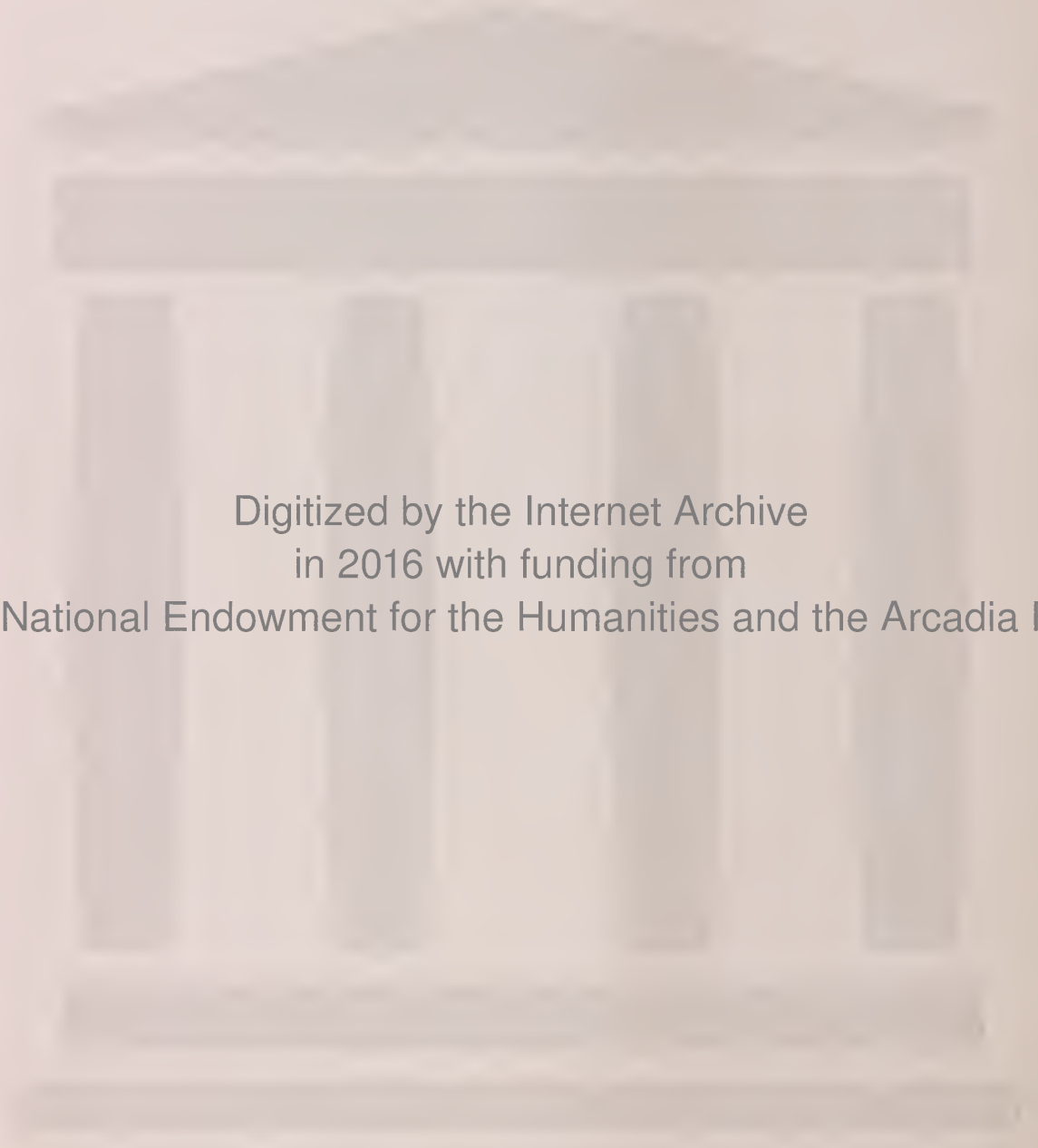


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ORIGINAL ARTICLES

SYMPOSIUM ON GOITER

BASAL METABOLISM*†

C. E. ERVIN, A.B., M.D.

DANVILLE, PA.

It is my intention to review briefly with you the subject of basal metabolism. Certainly no symposium on the subject of goiter would be quite complete without some thought being given to this phase of the question. While the test, as a rule, is not absolutely essential in establishing a diagnosis of toxic goiter, it does add refinement to our knowledge of the disease and is surely worthy of routine employment in any clinic doing thyroid surgery. Reports of the basal metabolic rate, like most laboratory investigations, must be interpreted by aid of the clinical manifestations.

The basal metabolic rate is the minimum heat production of an animal, and is usually expressed in calories per sq. m. of body surface per hour at O° C. and 760 mm. of mercury pressure. The determination may be made by a calorimeter, an apparatus which actually measures the heat elimination of the body, or by calculation from the gas exchange. The former is known as direct calorimetry, the latter as indirect. Direct calorimetry requires the use of a calorimeter, an expensive and complicated apparatus, and the services of two or three highly trained observers. Indirect calorimetry, using the oxygen consumption as a basis, is just as reliable, as has been shown by Benedict of the Carnegie Nutrition Laboratory in Boston, and can be done with a respiratory apparatus, obtained at a relatively low cost and operated by one trained technician.

It is well worth our time to stop here for a brief review of the development of the subject of calorimetry. Professor Graham Lusk[1] of the Russell Sage Institute of Pathology, New York City, has given us an excellent account of this development. The first interest in the subject dates back to 1870, when Lavosier, enthused over the then newly discovered oxygen, propounded the novel theory that the process of life consisted in oxidation with consequent heat production. Regnault and Rieset in 1850 designed a closed apparatus in which an animal was placed and the carbon dioxid removed by pumping the respired air through potash containers and oxygen added as required. This apparatus is the direct parent of the closed circuit system used to-day. In 1862 Pettenkofer and Voit completed their historical apparatus with which they could determine the carbon dioxid output of man. In 1866 Voit began determining the amount of heat which should arise from the oxidation of substances in the body and in 1885 Rubner, in Voit's laboratory, published results concerning the calorimetry of food, which have remained to this day the standard for heat values of proteins, carbohydrates and fats.

The first successful respiration calorimeter was built by Rubner in 1894. To this calorimeter Rubner attached a Pettenkofer respiration apparatus whereby it was made possible to determine the carbon dioxid output of the animal, so that indirect could be compared with direct calorimetry. Rubner determined from the nitrogen in the urine and feces of a dog fed on meat and fat (N. × 6.25) the amount of protein utilized. Each gram of protein yields 4.1 calories of heat when oxidized; consequently the heat produced from protein could easily be determined. In order to obtain the amount of heat derived from the fat, the amount of carbon excreted in the urine, feces, and expired air was determined, and from this was subtracted the amount of carbon contained in the protein destroyed (N. × 3.28). Since fat contains 76.5% of carbon and one gram of fat yields 9.3 calories, the following formula would give the caloric value of the fat consumed: Total C − (N. × 3.28) ÷ 76.5 × 100 × 9.3. Rubner found the heat derived from the protein and fat was exactly the same as measured by the calorimeter and, as Prof. Lusk says, "this was the first long-sought demonstration of the law of the conservation of energy as applied to animal life."

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†From the Department of Internal Medicine of The George F. Geisinger Memorial Hospital, Danville, Pa.

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Atwater, for a time associated with Voit and Rubner in Germany, after returning to America, began work on a calorimeter which would measure the heat production in man. Rosa, a physicist, was associated with Atwater. Their calorimeter demonstrated that direct and indirect calorimetry agreed in man, during periods of mechanical work as well as when at rest. The original apparatus measured only the carbon dioxid, but the Carnegie Institute later gave Atwater funds to apply a closed circuit of Regnault and Rieset, so that oxygen consumption could also be determined. Consequently Atwater was able to determine the respiratory quotient for different foods. F. G. Benedict became associated with Atwater in the Carnegie Nutrition Laboratory in 1895 and he is now the controlling genius of that institution.

The next move of major importance was the construction of a respiration apparatus by the Russell Sage Institute of Pathology associated with the Bellevue Hospital, New York. This work was ably done by Prof. Graham Lusk, Dr. Eugene F. Du Bois, and their associates. The thirty or more papers[2] tell of their excellent work on metabolism in health and disease.

As a result of the extensive studies made by Benedict and his coworkers at the Carnegie Nutrition Laboratory and by Gephart and Du Bois[3 4 5] it has been shown that the methods of indirect calorimetry are perfectly reliable and compare favorably with the direct determinations. Carpenter[6] has shown that for indirect determinations two types of apparatus are suitable, the closed circuit and the gasometer.

The latter is often called the Tissot or more properly the respiratory valve apparatus. The expired air is collected in a spirometer for a given period, measured, sampled and the composition determined by a Haldane gas analysis apparatus. This method is highly technical and requires the services of an expert gas analyst who is constantly doing this work, but is very reliable when properly manned.

The respiration apparatus of the Benedict type enjoys the widest clinical employment. This is a closed circuit system, the patient breathing into and out of a confined volume of air. An electrical blower forces air through soda lime, where the carbon dioxid is absorbed. Oxygen is absorbed in the lungs, the amount being represented by the displacement in the volume of the respired air. The spirometer serves the twofold purpose; that of an expansion chamber, and as a graduated container for the oxygen. The expired air is led from the patient to the spirometer by the larger rubber tube, from which it is forced by the blower through the purifying bottles, to be returned to the patient in the smaller tube. The patient is connected with the apparatus by means of a 3-way valve. Either a mouthpiece and nose clip are used or perhaps what is better, in extremely toxic cases, a Tissot mask. Two to three liters of oxygen are added to the spirometer, the motor started and the machine tested for leaks by putting a 100 gm. weight on top of the bell. The apparatus is then ready for use.

PREPARATION OF THE PATIENT

In order to meet with basal levels, the patient must be examined in the postabsorptive period, i. e., 12 to 18 hours after the last food was taken and after a period of 20 minutes to a half hour rest. The patient should be freed of apprehension by making one or more trial trips to the metabolic room, where she becomes familiar with the apparatus and acquainted with the observer. After the period of rest the patient is connected with the machine and at the end of a normal expiration the 3-way valve is turned so as to cause the patient to breathe into and out of the apparatus. As soon as the respirations have become regular, the test is started—the spirometer reading, the pulse rate and respirations are recorded, as well as the temperature of the enclosed air. Readings should be taken every four or five minutes throughout the test, as in this way discrepancies in the rate of oxygen absorption are quickly detected. The time of the experiment may run 10 to 15 or 20 minutes, depending upon the patient. If you can get only one fifteen-minute period with three five-minute checks, you are safe in making the calculations. If less than one fifteen-minute period, there should be two ten- or twelve-minute periods.

CALCULATIONS

Several methods are satisfactory and little difficulty is attended by any of them. For the general usage, however, I feel it is best to avoid the use of logarithms. The following method was passed on to me through the kindness of Dr. Jonas of the Pepper Laboratory at the University Hospital, Philadelphia. The amount of oxygen, expressed in liters, consumed during the test, is multiplied by 60 and divided by the duration of the period. This gives the liters of oxygen consumed per hour. This figure is now corrected for O° C. and 760 mm. mercury pressure. The corrective figure is easily obtained from Table No. 1, which is taken from Aberhalden's Handbook No. 3, page 589. You will note in the first column the temperature and in the others the figures for different baro-

metric pressure. Say a temperature of 22 and barometric pressure of 29.50 will give a corrective factor of .886. Multiply the oxygen consumed in one hour by this figure and you have the oxygen per hour at O° C. and 760 mm.

TABLE NO. I

(Aberhalden Handbook No. 3, page 589)

Bar. Pres.	29.1	29.5	29.9	30.3	30.7
To 16° C.	.740	.750	.760	.770	.780
17	.896	.908	.920	.932	.945
18	.892	.904	.915	.928	.940
19	.887	.899	.911	.923	.936
20	.882	.894	.906	.919	.931
21	.878	.890	.902	.914	.926
22	.873	.886	.898	.910	.922
23	.869	.881	.893	.905	.917
24	.864	.876	.888	.900	.912
25	.860	.872	.884	.896	.908
26	.855	.868	.880	.891	.903
27	.850	.863	.875	.887	.899
28	.845	.858	.870	.882	.894
29	.840	.852	.864	.876	.889
30	.835	.847	.859	.871	.884
31	.829	.842	.854	.866	.878
32	.824	.838	.848	.861	.873
33	.818	.833	.843	.855	.867
34	.813	.825	.837	.850	.862

mercury pressure. The next step is to determine the calorific value of this oxygen. You will recall that the calorific value of the oxygen consumed depends a great deal upon the sort of food oxidized. For example, when carbohydrate is burned, the volume of oxygen absorbed is equal to the amount of carbon dioxid eliminated. The respiratory quotient is then one and the calorific value of one liter of oxygen would be 5.047 calories. When fat is oxidized, however, the respiratory quotient is 0.70 and the calorific value of one liter of oxygen is only 4.686. We now know that under basal conditions the proportion of fat

TABLE NO. II

Standards of Normal Metabolism

Average Calories per hour per sq. m. of body surface (DuBois).

Age Years	Males Cals.	Females Cals.
14-16	46.0	43.0
16-18	43.0	40.0
18-20	41.0	38.0
20-30	39.5	37.0
30-40	39.5	36.5
40-50	38.5	36.0
50-60	37.5	35.0
60-70	36.5	34.0
70-80	35.5	33.0

and carbohydrate (COH 38.8 – Fat 61.2) is such as to give an average respiratory quotient of .82 or a calorific value of 4.825 to the liter of oxygen.

To return now to the calculations: The amount of oxygen consumed per hour at O° C. and 760 mm. of mercury pressure is multiplied by 4.825 which gives the total calories per hour. In order to determine the total calories per hour per sq. m. of body surface, this figure is divided by the height-weight, formula of Du Bois. The difference between this figure and that for the normal (Table No. 2) for age and sex is determined and the difference divided by the normal. This gives the percentage above or below normal.

INTERPRETATION OF FINDINGS

Reports of basal metabolic rates, like all laboratory investigations, must be interpreted by aid of the clinical manifestations. I may report to you a basal metabolic rate of plus 50 in two patients. One patient may have safely passed through a crisis and would be a fit subject for surgical therapy, whereas the second patient may be approaching an exacerbation and would be a poor surgical risk. We must always keep in mind the fact that numerous conditions, such as fever, certain cases of myocardial insufficiency, acidosis, etc., will cause an increase of the basal metabolism, a rise of one degree in temperature causing an increase in the basal metabolic rate of 7½%. Ruling out these conditions, an increase of the metabolic rate indicates an increased thyroid activity.

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BASAL METABOLISM

Its Application to Disorders of the Thyroid*

STANLEY D. CONKLIN, M.D.

SAYRE, PA.

During the last half century the medical world has acquired many aids in the diagnosis and treatment of conditions. Among the more recent additions we have one which places endocrinology still another step forward, namely, basal metabolism.

By basal metabolism we mean the minimal amount of heat production under standard or basal conditions. Accepting the theory that the hormone of the thyroid when in excess causes an increased heat production, and knowing that

*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

by the method of indirect calorimetry, the basal metabolism apparatus, we are able to calculate the amount of heat production in an individual during a certain period of time, we can readily determine whether or not the metabolism is normal, plus or minus in any given case.

Basal metabolism has found its greatest value in work referable to the thyroid gland, and in this it not only gives us a definite functional test of thyroid activity, but is also of great aid in the diagnosis, prognosis and treatment of thyroid disorders.

It is my purpose this afternoon in the brief time allotted for this demonstration to discuss some of the practical points in the performance of basal metabolism tests which have been derived from having performed a large series of tests on goiter patients at the Robert Packer Hospital since April, 1920.

PREPARATION OF THE PATIENT

The test should be done after a good night's rest in the hospital and a fast of from 12 to 14 hours; that is, early in the morning between 8 a. m. and 10 a. m. if possible. Some men allow water to be taken in the morning not later than 6 a. m. As little muscular exercise as possible is preferable. Patients should be taken to the metabolism room on a stretcher or in a wheel chair, and after obtaining the height and weight, a rest of 30 to 45 minutes on the cot should be allowed before beginning the test. Patients coming to the hospital by automobile, street car or otherwise should rest at least one hour. For the past year I have made it a practice to see during my evening rounds all cases who are to have the metabolism test the following morning, and give them a brief explanation of the test, emphasizing the fact that, while it is something unfamiliar, there is nothing to be feared, and that it is simply a breathing test. Meeting the patient, especially one nervous from an overactive thyroid, eliminates the nervousness so frequently encountered at the first test.

The patient is instructed to breathe as naturally as possible and to avoid forced expiration in an effort to overcome the slight resistance of the apparatus. Obese persons and those with marked thyroid enlargement are given special attention as to posture, the head being elevated and the patient placed in as comfortable a position as possible.

Repeating the test on the second and third days is good technic, as not infrequently high ratios are encountered in the initial readings. I find the results of the second and third tests usually vary only two or three points, while the first and second may show a difference of from 10 to 15 points.

The room temperature should be about 20 C. Patients are warned not to move during the test.

PERFORMANCE OF TEST

The spirometer is filled about one-fourth full with air, and twice as much oxygen is added from the tank. By using the blower for a few minutes an even mixture is obtained. The motor is now allowed to run for three minutes to determine if there is any leakage of oxygen about any of the valves. After the half-hour rest period the sterilized mouthpiece is placed in the patient's mouth and connected with the apparatus, being careful to make it comfortable, and asking the patient to keep the lips tightly closed about the rubber. The nostrils are closed with the nose clip and the patient allowed to breathe from the outside air for a few moments in order that he may become accustomed to breathing through the mouthpiece. After the breathing has become regular the valve is turned so that he breathes from and into the spirometer bell. Waiting from two to three minutes for him to become accustomed to breathing from the spirometer bell, a reading is taken at the height of expiration, the time noted, and the temperature from the thermometer in the spirometer bell is read and recorded. Likewise the pulse rate and respiratory rate are noted. The patient then breathes from the apparatus for ten minutes, when the reading at the height of an average expiration is again recorded, as well as the temperature, pulse and respiration. During this time the pulse and respiration should be taken every two minutes. While the patient is breathing from the apparatus the blower is blowing the air through a bottle of soda-lime to take out the CO_2, so that the difference between the volume in the tank at the beginning of the experiment and the end represents the amount of oxygen consumed. The average actual consumption per minute is then obtained, and after corrections for barometric pressure, temperature, age and sex, the normal consumption for an individual of that known height and weight is ascertained, and by comparison of the two the basal metabolism rate in that particular case is determined.

Having obtained a basal metabolic rate, the next step is the interpretation of the same. First of all one must be sure that there were no errors in the technic employed and that the test was obtained under absolute basal conditions. For instance, a high rate might be due to a fever that the patient had which was overlooked on

account of failure to record the temperature previous to starting the test. A very careful history and thorough physical examination are vastly important. Repetition of the test on subsequent days should always be the plan of study. A normal standard is necessary, and the one generally accepted is from minus 10 to plus 10.

Again, a classification of cases according to metabolic rates is both valuable and instructive and the one given by Frazier and Adler[1] is very satisfactory, which is as follows: Group 1, 10 to 20 plus; group 2, 20 to 40 plus; group 3, 40 to 60 plus; group 4, 60 and above.

The class under which the rate comes gives an index, to a certain degree, to the kind of treatment to be advised. For instance, with a rate of plus 40 or below, surgery is without danger; but with a rate of plus 60 or above, absolute rest and waiting for the metabolic rate to become lower, together with an improvement in the general physical condition of the patient, is the safest procedure to adopt. With an improvement in symptoms but a tendency for the metabolic rate to become higher, conservatism to the fullest extent will yield better results.

Interpretation of Findings

In interpreting the significance of abnormal metabolism findings in patients, we must correlate them with all clinical findings and weigh their probable importance in comparison with every other sort of evidence in any given case, just the same as we should do in interpreting any other laboratory or special finding, as the Wassermann test, x-ray, blood sugar, and the like.[2]

In the study of basal metabolism it is important to remember that like all physiologic processes either in normal or pathologic conditions it is subject to wide variations. All abnormal basal metabolic rates are dependent on or accompanied by an altered function of the thyroid gland.

Basal metabolism plays a very important part in the differential diagnosis of borderline cases. Accepting the definition of hyperthyroidism as a clinical syndrome resulting from the presence in the body tissues of an excessive amount of thyroxin causing increased heat production and the conception that the basal metabolic rate serves as a fundamental classification of disease,[3] it is easily conceivable how a very sharp distinction can be drawn between mild exophthalmic goiter and simulating conditions such as "effort syndrome," "cardiac neurosis," "nervous irritability," "neurasthenia," which on superficial examination present many of the symptoms and signs of mild exophthalmic goiter, but in which the basal metabolic rate is found to be normal and on a thorough investigation can be demonstrated to be independent of an excess of the thyroid hormone. It often occurs in the regions of endemic goiter that these cases are accompanied by a colloid enlargement of the thyroid gland, with no apparent relationship, and it is for this reason that the basal metabolic rate is of such important diagnostic value.

Peabody, Weaner and Tomkins[4] found in fifty-three soldiers with rapid heart action, nervous irritability and physical inferiority, that hyperthyroidism was diagnosed in twenty-four. These twenty-four showed a normal basal metabolic rate, disproving the diagnosis. Here again, far more important than a palpable goiter are a careful history of the case and the character of the symptoms. Also, more than one metabolic rate should be obtained, as the first result is apt to be above normal while subsequent ones will be within normal limits. An increase of the metabolic rate in a neurotic individual means that the test was not done under basal or standard conditions.

It must always be borne in mind that symptoms such as nervousness, tachycardia, loss of weight, etc., while accepted as pathognomonic of the thyroid syndrome, may be due to conditions of the most diverse character. Nervousness, malnutrition from any cause, overwork, tuberculosis or syphilis could be possible causes of such a symptom group. Clinically, these cases can be diagnosed with a certain degree of accuracy from thyrotoxic cases, but as regards the thyroid problem, definitely and accurately. An estimation of the metabolic rate must be made which will furnish us with a reliable proof either for or against the existence of thyroid disease.[5]

The basal metabolic rate is of great value in studying the course of hyperthyroidism. An increase in the metabolic rate means a parallel increase in thyroid activity. While the basal metabolic rate gives us an indication of the thyroid activity, yet it does not tell us whether or not that particular case will safely undergo a surgical operation, just as in a case of pneumonia, the higher the temperature, the greater the mortality, and the same is true of the rate of metabolism. All patients with the same rate do not present the same clinical picture, some being extremely nervous, others in crises, yet others show little physical disturbance. Nevertheless the basal metabolic rate serves as a valuable criterion in deciding on the best type of operative procedure.[6]

The basal metabolic rate is also of value in the diagnosis of myxedema and hypothyroid-

ism. Again one must remember that low rates are also encountered in inanition and hypopituitarism. In the treatment of hypothyroidism the basal metabolic rate is of the utmost value. In these cases it is the purpose to give either by mouth or intravenously a sufficient dose of thyroid extract or thyroxin daily to bring the basal metabolic rate to normal and to maintain the patient at the normal level by a proper daily dosage. To accomplish this frequent repeated basal metabolic rates must be obtained until the proper dosage has been accurately found. As time goes on the interval between tests can be greater.

The same procedure holds true for treatment of certain selective cases of goiter by the x-ray. Here the improvement can be checked up by the metabolic rate. The test should be done after every four to six treatments, one week apart and not sooner than one week after the last treatment.

In severe hyperthyroidism or exophthalmic goiter where it is necessary to resort to ligation, the basal metabolism test again gives an index to the improvement. It is the method in our clinic in these cases, if the basal metabolic rate remains high after ligation for any length of time, to send the patient home for a period of absolute rest, to return at definitely stated intervals for metabolic tests, so that, when the metabolic rate has become sufficiently reduced and satisfactory improvement has been made in the patient's general condition, with more or less subsidence of symptoms, operation can be advised with much less risk.

SUMMARY

(1) Basal metabolism is the measurement of heat production in an individual under standard conditions and gives us an index of the amount of thyroid activity.

(2) Patient should be in postabsorptive period and be given an explanation of the test.

(3) An attempt should be made to eliminate the slightest technical and physiological errors.

(4) Basal metabolism is of the utmost value in clinching the diagnosis of certain borderline cases.

(5) It serves as a therapeutic guide and affords a method of clearly visualizing the progress of patients with thyroid disease.

Robert Packer Hospital.

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ADENOMATOUS GOITER*

DRY CLINIC

CHAS. B. NOECKER, M.D.

SCRANTON, PA.

Adenomata of the thyroid manifest themselves by single or multiple enlargements usually harder than the surrounding tissues, except in cases of their becoming cystic, when they are softer. Occasionally they undergo calcareous change, and rarely they may become malignant. They cause more asymmetrical enlargement than any other condition of the gland.

The symptomatology in the early stages is practically nil. Later there is a sense of fulness about the neck, and if situated in certain locations in the gland, pressure symptoms develop.

The great danger from these simple growths is the development of hyperthyroidism.

Plummer, of the Mayo clinic, has found that 23% of these cases develop toxic symptoms, but not until the goiter has been present about 16 years, thus bringing these patients above the age of 30 years before they present any serious toxic symptoms.

There are two theories as to the causation of this toxicity. One is that the adenomatous tissue itself assumes functional activity. Marine and Graham have shown that adenomata perform the thyroid function. The other theory is that the adenomata by their presence cause stimulation of the normal gland tissue and thus produce over-secretion.

The patient whom you see here to-day, Mrs. A. C., age 50, married, is the mother of three children, all living and well. She first noticed an enlargement of her neck twenty years ago. It started on the right side and grew slowly, presenting no symptoms except for the tumor mass. Three years ago she began to get nervous and have palpitation of the heart. She also noticed herself getting tired more easily and to have some loss of weight. All these symptoms have gradually increased in severity.

This mode of onset is in marked contrast to the rapidly increasing severe hyperthyroidism of exophthalmic goiter. In the former the cardiovascular system suffers most, while in the exophthalmic type, the nervous system is the chief sufferer The period of onset of the latter

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type is much shorter, usually averaging about a year and a half.

Examination of this patient reveals a nodular enlargement of her thyroid on the right side and in the midline. The mass is freely movable, and moves up and down during deglutition. There is a slight tremor of the fingers. She has a pulse of 90, which intermits occasionally. The heart sounds are clear, no evidence of valvular or myocardial lesion. She has a blood pressure of 160 systolic, and 78 diastolic. Her basal metabolism is plus 49. Her urine analysis shows a small amount of albumin and a few hyaline casts.

Treatment: Since we know that this type of goiter does not produce symptoms at the time of life that they usually develop, and since we also know that the thyroid gland is very essential at that particular time of life, it is best not to operate on young persons unless the goiter is of large size or causes pressure symptoms.

We also at this time of life face the possibility of recurrence because small nodules of adenoma too small to be seen or palpated will be left behind and undergo enlargement.

Surgery should be advocated, therefore, in patients over thirty, and before they begin to develop hyperthyroidism.

In cases in which hyperthyroidism is present to a marked degree preoperative treatment should be carried out, consisting of absolute rest in bed, plenty of water and digitalis to steady the heart. Preliminary ligation does not seem to do the good that it does in exophthalmic cases.

The operation should be a subtotal thyroidectomy with a removal of the isthmus and a resection of both lobes, leaving gland tissue posteriorly amounting to the equivalent of one-third of a normal sized lobe on each side.

This bilateral removal should be done even if the enlargement is all on the one side, for if the affected side alone is removed, the remaining half is very apt to undergo hypertrophy and cause the patient to feel that there is a recurrence.

Very light anesthesia (analgesia), preferably gas-oxygen, and local anesthesia (½ of one per cent novocain) should be used.

The after treatment should include plenty of liquids, especially water and again digitalis if necessary.

Patients should be told to guard against severe mental or muscular strain if of the hyperthyroid type for from six months to one year.

213 Connell Building.

EXOPHTHALMIC GOITER*

L. A. SHERIDAN, M.D.

WILKES-BARRÉ, PA.

The patient, Miss G. B., is nineteen years of age. Her father and mother are both living and well. There are six other children, all healthy, the oldest being twenty-one and the youngest ten years of age.

She had a mild attack of scarlet fever at the age of ten, but was not confined to bed. For the past year she has been treated for nephritis. She has been fitted with glasses to relieve a headache and pain in the eyes, but has obtained no relief. Menstruation is regular and lasts four days. She has a good appetite.

Present Illness: Her mother states that her daughter has been nervous for about ten years, and dreads to go about in public or attend amusements. Due to this she has followed no outside occupation, preferring to stay at home. For the past year her nervousness has greatly increased and there has been a considerable loss in weight. She tires easily, and on exertion becomes breathless.

Physical Examination: She is fairly well nourished. Exophthalmus is present, which is somewhat more marked in the right eye. The thyroid is enlarged. The lungs are normal and there are no cardiac murmurs or signs of dilatation. Tremor is present but not marked. Blood pressure — diastolic 80, systolic 130. Urine shows a specific gravity of 1,004, a heavy trace of albumin, and no sugar. Unfortunately there has been no estimate of the basal metabolic rate.

Diagnosis: The diagnosis of this disease should not be difficult as there is a certain definite group of symptoms. Nervousness and tremor are found in over ninety-five per cent of the patients, palpitation and tachycardia in about eighty per cent, and loss of weight and strength in about ninety per cent, while exophthalmus occurs in over seventy per cent. There is some dilatation of the heart in about sixty per cent of the cases, a soft presystolic murmur occurring in about half of these. Edema, vomiting and diarrhea occur late in the disease. Cabot points out that diabetes is the only other disease in which the patient loses weight and strength while retaining a good appetite. The objective symptoms alone would enable one to make the diagnosis in this patient. The urinary findings show that she also has some parenchymatous nephritis.

*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Treatment: In the patient presented here, the course of the disease is chronic, and there have been no signs of an acute exacerbation. The heart is in good shape and her general condition is fair. Despite the urinary findings I would recommend, after a week's rest in bed, that she have a resection of both lobes. The operation is better done now to save the kidneys from the further toxic action of the thyroid. On the other hand if this girl presented another phase of the disease in which there is a general flare-up of all the symptoms, with a sudden increase in the pulse rate, and became very nervous and irritable, with a basal metabolism rate increasing, it would be unwise to do any operating whatever. In that case she would be put to bed, given sedatives, a forced diet with increased fluids. Usually in several weeks, these active symptoms subside, and the operation would not be performed until a month or two later.

Had she come to us in the advanced stage of the disease there would still be a difficult problem. In that case we would have to consider the damage already done to the heart, kidneys and nervous system, and the general toxic condition of the patient. This would be shown by a rapid, weak pulse of 130 or over, cardiac dilatation, extreme nervousness and irritability. Knowledge of the basal metabolism rate here is of great value, and should it exceed 40 per cent, it will require good surgical judgment to apply the proper treatment.

Estimation of the basal metabolic rate serves two purposes: first, as an aid to diagnosis, and second, it shows the degree of toxicity with which the patient is suffering at the time taken. It must be remembered that it does not show the amount of damage that has already been done to the heart, kidneys and nervous system, so that a decision as to whether or not the patient shall be operated upon rests largely upon the physical examination and history.

Some of these patients will not even stand ligation and nothing can be done until such time as they show improvement. In others, ligation of one upper pole, followed by the other in about eight days, may be attempted. These patients usually show great improvement and thyroidectomy can be performed in about three months.

For the inoperable cases we can only recommend rest, diet, sedatives, digitalis and x-rays.

The operation for exophthalmic goiter is more difficult than for the other types. In advanced cases the gland is very friable, the vessels numerous and large, even in the capsule. This makes the hemorrhages severe. Hemostats placed on the capsule simply fall out and create more hemorrhage, so no time should be wasted in separating the gland from the surrounding tissues and dislocating it, in order that the main vessels may be clamped.

Postoperative Treatment: Immediately after the operation these patients should be given saline or glucose solution by rectum, and water by mouth as soon as they are able to retain it. Sufficient morphine is given to allay the pain and quiet restlessness. They should be kept in the hospital for two weeks and on their discharge should be advised as to their mode of living, environment, work and general care of themselves.

247 N. Main Street.

COLLOID GOITER*

MICHAEL J. NOONE, M.D.

SCRANTON, PA.

This form of goiter, which is often met with in practice, is thus termed because its main characteristic is an accumulation of thick tenacious colloid in follicles of the organ, in isolated lobules, lymph spaces and even the whole organ. In the average case, the gelatinous colloid so overfills the follicles that the goiter is lobulated and hard. It is probably an advanced stage of the softer goiters, both diffuse and nodular and may be distinguished from them through its relative hardness and the fact that it does not become reduced under pressure, owing to the escape of a part of the fluids in the neighboring tissues, as do some of the softer growths.

Plummer states that "Diffuse colloid may be considered an anatomic expression of functional disturbance in prenatally developed thyroid acini. The thyroid is subject to the laws of rest and repose; it stores thyroxin, iodin and colloid, and during periods of stress it absorbs a portion of the colloid, utilizes the stored iodin and delivers thyroxin to the blood stream. The storage of colloid in excess of the normal is indicative of a resting phase of the thyroid and is a result of damage from preëxisting hypertrophy and hyperplasia."

Colloid goiter is most frequently seen during the period of adolescence and pregnancy. The gland is soft, the enlargement uniform, consisting essentially of distention of the acini with colloid material. This accumulation is due to a physiological stimulation of the thyroid in the absence of sufficient iodin. One or both lateral lobes may be as large as eight to ten cm. in

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diameter. The thyroid arteries are distended and roll under the finger like a large lead pencil. Bruit and loud thrills are present, and in the majority of cases, the basal metabolism is from eight to fifteen per cent below the average normal. Pressure symptoms may or may not be present, depending upon the tissues affected. Colloid goiter rarely gives rise to constitutional symptoms. While the goiter frequently disappears, there sometimes remains a small adenoma, originating from the embryonal cells as a result of the same stimulation that caused the colloid excess.

PROPHYLACTIC TREATMENT

The first step is the eradication of all focal infection of the oral and nasopharyngeal area, also of congenital syphilis. I would suggest that more attention be given those patients suffering from a scant and irregular menstruation, as there seems to be a marked endocrine relation between the thyroid and ovaries.

According to Marine and his coworkers, this type of goiter, when seen early, can be prevented and cured by the administration of sodium iodid, given in 0.2 gm. doses daily for ten consecutive days, repeated each spring and autumn. This method prevented the formation of goiter in over ninety-nine per cent of the school children of Akron, Ohio, where this method was carried out for a stated number of years. It also demonstrated that twenty-one per cent of those not receiving the prophylactic treatment developed enlargement of the thyroid gland during the time under observation. The sodium iodid treatment caused a decrease in sixty-five per cent of the enlarged thyroid, as contrasted with thirteen and eight-tenths per cent among those not treated. This seems to prove conclusively the soundness of the prophylactic treatment and the benefit that may be obtained for developed cases. This form of treatment may also eliminate the adenomata frequently developed coincident with colloid goiter, which cause trouble later in life. Plummer has achieved remarkable results: in from twelve to twenty-four hours following the intravenous administration of thyroxin, the thyroid vessels are not palpable and the bruit and thrill are no longer audible. The gland rapidly shrinks in size, in some instances becoming barely palpable in three weeks. The continued administration of thyroxin prevents the reappearance of the goiter. However, upon the withdrawal of the drug, the thyroid may rapidly attain its original size. After absorption of the colloid, iodin, in many instances at least, will prevent its redisposition. The thyroid of the human cretin distended with colloid reacts as does the colloid goiter of adolescence.

X-RAY TREATMENT

Russell Boggs claims good results from irradiation of colloid goiters of adolescence, and after a number of years, none of the colloids have shown adenomata or degeneration. Most authorities advise against x-ray treatment for this type of goiter. Colloid goiter of adolescence is the only type of goiter which disappears under the administration of iodin or thyroxin and should not be considered a surgical condition. Its failure to disappear under the administration of these agents probably indicates that it is not a simple colloid goiter, but one of the mixed types often seen, in which colloid goiter is associated with small adenomatous growths of the thyroid. When such goiters are treated with iodin or thyroxin, the colloid portion disappears and the goiter is reduced in size, but the adenomata remain and are then more easily recognized. Colloid goiters may recur when removed surgically unless iodin or thyroxin is administered as a postoperative measure.

The colloid goiter of adults may call for surgical interference, as it is likely to become toxic by the formation of adenomata and cause dangerous pressure symptoms and may undergo malignant degeneration.

In conclusion, I would suggest that if we are to accomplish results from this established principle of prevention by this simple and practical method of Marine, it should be brought to the attention of every medical man interested in the yearly examination of our school children and also to the men interested in industrial medicine.

PREVENTION AND TREATMENT OF SIMPLE GOITER*†

DAVID MARINE, M.D.

NEW YORK, N. Y.

It may be of interest to this audience to recall that the first practical demonstration of goiter prevention on a large scale was carried out in this state on brook trout, in the years 1909 and 1910. This was made possible through the efforts of the Commissioner of Fisheries, Mr. W. E. Meehan, who arranged with a large private fish hatchery in Pike County to place all the facilities of their plant at our disposal.

Our increasing knowledge of the physiology and pathology of thyroid enlargements has sim-

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†From the Division of Laboratories, Montefiore Hospital, New York.

plified greatly the clinical classification of goiter. For practical purposes we may divide goiter into two great groups:

I. Simple Goiter
- Endemic
- Epidemic
- Sporadic
- "Colloid"
- "Cystic"

II. Exophthalmic Goiter
- Hyperthyroidism
- Toxic Goiter
- Toxic Adenoma, etc.

Simple goiter includes those thyroid enlargements designated as epidemic, endemic, sporadic and physiologic; while exophthalmic goiter includes a great group of ill understood clinical states in which increased heat production and myasthenia are the two major manifestations. We know almost nothing concerning the essential nature of exophthalmic goiter despite an enormous literature and despite the fact that we know more about the thyroid than any other body tissue. That it is a highly complex disturbance of the functional interaction of many organs both with internal and external secretion is certain, and until more is known concerning its nature, I believe we are not justified in trying to fool ourselves into thinking we are explaining the condition merely by multiplying names.

While to-day we sharply distinguish between simple goiter on the one hand and exophthalmic goiter on the other, there is evidence that in man there are important relations between the two groups. Exophthalmic goiter, so far as is yet definitely known, occurs spontaneously only in man, while simple goiter occurs in all animals having the ductless thyroid. Exophthalmic goiter is not notably associated with districts, while with simple goiter this is most characteristic. Exophthalmic goiter occurs more frequently in the more highly developed and energetic races, while in simple goiter these factors have no influence.

Occurrence and Distribution

Simple goiter may occur in any part of the world, on land or on sea, and in all animals with the ductless thyroid. On the seacoasts generally it is rare and is usually seen in women during the childbearing period. There are many reports of the sudden occurrence of large numbers of goiters—so-called epidemic goiter—both in man and in animals. These sudden outbreaks likewise may occur anywhere, as, for example, in fish hatcheries, in large poultry establishments, in herds of dairy cattle and in military organizations. Then there are the great more or less defined regions of the world where the incidence of goiter is very high and where all animals are affected — the so-called endemic goiter districts. The most notable of these districts are the Himalaya Mountain region of Northern India, the Alps region in Europe, the Andes plateau, and in North America the Great Lakes Basin and the Cascade Mountain regions of Oregon, Washington and British Columbia. These regions, for the most part, occur on soils deposited from the melting ice of the last glacial period.

Etiology

The ultimate cause or causes of thyroid enlargement are still unknown. The immediate cause is a deficiency in the iodin store of the thyroid This deficiency may be relative or absolute; that is, goiter is only a symptom of a disturbance in nutrition in which iodin plays an important rôle. The iodin deficiency may result from any condition which (1) increases the needs of the organism for iodin as in certain infectious diseases, (2) during puberty, (3) during pregnancy and lactation, or (4) from any condition which interferes with or prevents the utilization of the normal intake of iodin, or lastly, (5) from an actual lack or a deprivation of iodin (natural or experimental). Certain recent experimental observations promise to shed some light on the underlying causes of the iodin deficiency and therefore on the ultimate cause of thyroid enlargement. The relation of the sex glands to thyroid enlargement, known in its crudest form (the enlargements during puberty and pregnancy) from the earliest times, has taken on renewed interest by the experimental demonstration of a thyroid-suprarenal cortex interrelationship. In brief, the experimental evidence for such a relationship is as follows: If one cripples sufficiently the suprarenal cortex in dogs, cats or rabbits with intact thyroids, there occurs a marked and prolonged rise in heat production, while if one removes the thyroid gland before crippling the suprarenal cortex, this rise in heat production does not occur. It has been further shown that the rise in heat production is associated with a rapid discharge of the iodin containing hormone from the thyroid. This interrelationship, it is believed, ultimately will be shown to have an important bearing on those thyroid enlargements occurring particularly during puberty, pregnancy and the menopause.

During the developmental period of bacteriology, great stress was laid on the possibly infectious nature of goiter. The conception that goiter is due directly to a *contagium vivum* in the sense that this term is ordinarily used may now be abandoned. That toxins both of bac-

terial and of other origin may indirectly excite the thyroid gland is, of course, well known through the experimental studies, particularly of McCarrison. The thyroid enlargements seen in tuberculosis, in active syphilis, in acute fevers such as pneumonia and scarlet fever, clearly establish the fact that the thyroid is an important element in the defensive mechanism against infections.

Practically every known substance in the soil, air and water have at one time or another been advanced as etiologic factors. Water has been associated with the cause of goiter by all peoples from remotest times. The North American Indians and the inhabitants of Central Africa were as strongly convinced that water was a causal factor as were the Greeks and Romans. If water is a factor (and I think it is), it would appear that it is the *absence* and not the presence of some substance which causes thyroid hypertrophy. At present the best conception of the etiology of simple goiter is that it is a compensatory or work hypertrophy arising in the course of metabolic disturbances and immediately depending on a relative or absolute deficiency of iodin.

PATHOLOGICAL ANATOMY

Anatomically, a wide range of changes may be present, depending on the species of animal and on the stage (duration) of the disease. It always begins with a decrease in the colloid material and a hypertrophy of the epithelial cells, at first cuboidal, later columnar, with infoldings and plications. In man and fowls, the stage most commonly studied anatomically is characterized by an abundance of colloid material—the so-called cystic or colloid goiter of the older writers—while in dogs, sheep, cattle, pigs, fish, etc., the accumulation of colloid is seen only in the late regressive or quiescent stages. In man the adenomatous form (struma nodosa) is very common, but it is exceedingly rare in all the lower animals. These adenomas, in all probability, arise from fetal cell rests (Wölfler). The stimulus which initiates the growth of the cell rests (adenomas) and that which initiates the growth of the more differentiated thyroid tissue are probably identical. These growths have some of the attributes of tumor, in that their growth may not be arrested by iodin administration or by the natural physiologic compensation. On the other hand many of them are capable of full thyroid function.

EXPERIMENTAL PHYSIOLOGY

In order to present more clearly the experimental basis of goiter prevention, I will enumerate a few of the more important physiological and chemical facts on which the practical application of this accomplishment in preventive medicine is based:

1. The active principle of the thyroid is a very stable organic compound of iodin, first recognized by Baumann in 1895 and isolated in crystalline form by Kendall in 1916.

2. The developmental stage of all goiters in all animals is characterized by an increased blood flow, an increase in the size and number of secreting cells, a decrease in the stainable colloid and a marked absolute decrease in the iodin store. The decrease in the iodin store precedes the cell hypertrophy and hyperplasia.

3. Similar changes (compensatory hyperplasia) invariably occur in the remaining portion of the gland when a sufficient amount of the entire gland is removed. The amount of gland it is necessary to remove in order to produce compensatory hyperplasia varies somewhat with the species of animal, with the age, diet, and especially with the presence or absence of iodin.

4. The administration of exceedingly small amounts of iodin in any mannner completely protects the remaining thyroid against compensatory hyperplasia even after removal of three-fourths of the normal gland.

5. Thyroid tissue autotransplanted in any part of the body exhibits the same reaction to iodin as the non-transplanted tissue.

6. If most of the thyroid gland is removed before or in the early stages of pregnancy and rigid precautions are taken to exclude iodin, the young at birth will have enlarged thyroids, as first shown by Halsted in dogs while, if iodin is available, the young at birth will have normal thyroids.

7. A milligram of iodin given at weekly intervals has been found sufficient to prevent thyroid hyperplasia in young dogs.

8. The thyroid tissue has an extraordinary affinity for iodin as has been demonstrated both *in vivo* and *in vitro*.

9. If the iodin store in the thyroid is maintained above 0.1 per cent, no hyperplastic changes, and therefore no thyroid enlargement can develop.

GOITER PREVENTION

As already mentioned, these facts were first utilized on a large scale in the prevention of goiter in brook trout in 1910. It was demonstrated that iodin added to the water in a concentration not exceeding 1 : 1,000,000 arrested or prevented the development of thyroid hyperplasia. Since then, this method, or some modification, has been successfully applied in the pre-

vention of goiter in men, sheep, cattle, hogs and poultry. One of the most striking illustrations of its practical application in animal industry is reported in the results obtained in the Pemberton Meadows Valley in British Columbia. In 1916, Mr. Ronayne, a prominent farmer in this valley, sought advice as to what could be done to control goiter, since it was practically impossible to rear any animal to maturity on account of goiter and cretinism. At that time he was advised to use the equivalent of a few milligrams of iodin weekly, administered in the food. Since then, Mr. Ronayne states that they have had no difficulty in absolutely controlling goiter by this very simple and inexpensive means.

To our knowledge, the prevention of goiter in man, while it may be carried out just as simply and as easily as in the lower animals, was not attempted on any large or practical scale until 1917, when Dr. Kimball and I began its practical application in the school population of the city of Akron. The method used at that time consisted in the administration of 2 gms. of sodium iodid in 0.2 gm. doses distributed over a period of two weeks, and repeated each autumn and spring. It was pointed out at the time that this amount of iodin was excessive and far beyond the needs of the individual or the ability of the thyroid to utilize or store it. These experiments were carried out over a period of two and one-half years and the results are briefly as follows: Of 2,190 pupils taking 2 gms. of sodium iodid twice yearly, only five developed enlargement of the thyroid; while of 2,305 pupils not taking the prophylactic, 495 developed thyroid enlargement. Of 1,182 pupils with thyroid enlargement at the first examination and who took the prophylactic, 773 thyroids decreased in size; while of 1,048 pupils with thyroid enlargement at first examination and who did not take the prophylactic, 145 thyroids decreased in size. These figures demonstrate in a striking manner both the preventive and the curative effects. Klinger in Switzerland in 1921, reported even more striking curative effects. He worked with school populations in which the incidence of goiter varied from 82 to 95 per cent, while our maximum incidence in Akron was 56 per cent. He reported observations on 760 children, of whom 90 per cent were goiterous at the first examination. After fifteen months' treatment with from 10 to 15 mgms. of iodin weekly, only 28.3 per cent were goiterous.

Since these results were reported, numerous papers have appeared in the European literature confirming these observations and extending the prophylactic use of iodin especially in Switzerland, where the Swiss Goiter Commission has advised the use of iodin for all cantons.

As already pointed out, the form or manner of iodin administration is of little importance. The essential conditions to be borne in mind are that iodin is effective whether administered by inhalation, by mouth, by application to the skin or by injection; that only very small doses are necessary (60 to 120 mgms.—1 to 2 grains—annually is sufficient to prevent thyroid hypertrophy), and that it should be given in the most practical way that provides control of intake. In Switzerland they have used iodized fat tablets containing 3 to 5 mgms. of iodin. Historically, and, of course, quite unknowingly, iodized salt was the first means of administration, and I am of the opinion that ultimately it will prove to be the best means of administration. A concrete illustration of the efficacy of iodized salt is shown in the Canton of Vaud in Switzerland, which has been singularly free from goiter, while in all the surrounding cantons the incidence of goiter is very high. Recent examination of the salt used in this canton shows it contains traces of iodin. A similar accidental experiment of this kind occurred in Michigan where the incidence of goiter in sheep greatly decreased following the use of crude salt.

TREATMENT

Now as regards the treatment of goiter, iodin alone suffices to bring about a cure in the very early or developmental stages of goiter both in man and animals. In the long-standing cases, and unfortunately the physician's advice is not sought until the goiter is well advanced, medical measures are only partially successful. There is no difficulty in relieving any physiological insufficiency of the thyroid by iodin, but it is quite impossible to bring about the absorption of large goiters by medical measures. From many years' experience in Cleveland, I have come to the conclusion that the best plan of medical treatment for long-standing goiters is as follows: Give one gram desiccated thyroid, distributed over a period of two weeks, then saturate the thyroid with iodin by giving 15 to 30 c.c. of syrup of hydriodic acid in 1 c.c. doses daily, or any other preparation containing the equivalent amount of iodin. This treatment may be repeated twice yearly.

DANGERS AND UNTOWARD EFFECTS

The dangers of giving iodin or desiccated thyroid in the amounts indicated to children and adolescents are negligible. Exophthalmic goiter and iodism are the only two important conditions to be looked for. Much has been written on the production and aggravation of exophthal-

mic goiter by iodin and desiccated thyroid. A study of this literature shows that excessive amounts of iodin or desiccated thyroid—grams instead of milligrams—were used. In adults the possibility of aggravating an exophthalmic goiter or even the production of the syndrome in susceptible individuals must be kept in mind.

Variations in susceptibility of individuals to desiccated thyroid and adrenalin are well known. In some apparently normal individuals the pulse rate and metabolism may be markedly raised by a gram of desiccated thyroid, while in others no such effect is noted after ten times this amount. The explanation for this susceptibility is one of the most interesting problems in endocrinology, and recent work has offered a partial explanation in that epinephrin enhances the action of thyroid and thyroid enhances the action of epinephrin. Desiccated thyroid, therefore, while it is an excellent prophylactic, is too dangerous for general use because of variations in individual susceptibility.

It is only in the treatment of long-standing goiter that desiccated thyroid has any advantage over iodin. In such cases there is no question that a greater reduction in the size of the goiter can be brought about by desiccated thyroid, but it must be used with great care and under close supervision. Thyroxin has no advantage and many disadvantages over desiccated thyroid in the practical treatment of goiter. Iodism was observed in 0.5 per cent of 2,200 cases treated with sodium iodid in Akron, and Klinger in Switzerland did not observe a case. The nature of iodism is still unknown but sodium and potassium salts appear to cause iodism more frequently than organic preparations.

SUMMARY

The administration of 60 to 120 mgms. of iodin in any form twice a year is sufficient to prevent simple goiter in man. The old adage that an ounce of prevention is worth a pound of cure is outdone in the case of goiter, where one milligram of prevention is worth more than a thousand milligrams of cure. Iodin has been knowingly used in the treatment of human goiter since 1820 and in its prevention since 1917. In young individuals with thyroid enlargements of recent development, the curative effects of iodin are very striking and amount to complete relief. In long-standing goiter, neither iodin nor desiccated thyroid are of much value in relieving the deformity.

The dangers and untoward effects of iodin when used in proper amounts are negligible. Iodin, like all other foods has been greatly abused, and its abuse in the treatment of goiter will continue until the profession as a whole realizes that the maximum storage capacity of the normal thyroid for iodin is not over 30 milligrams, and that such a store is sufficient to meet the ordinary physiological needs of the organism for months. Desiccated thyroid is theoretically better than iodin in the treatment and prevention of goiter but practically it is too dangerous a drug to be recommended at present.

Simple or endemic goiter most commonly develops (1) during fetal life, (2) during adolescense, and (3) during pregnancy and lactation. Any plan of prevention that controls thyroid growth during these three periods would practically eliminate goiter. Goiter in the mother and fetus can be prevented as easily and as simply as that of adolescents and by the same means. The greatest number of goiters develop around the age of puberty, and in the endemic districts of the United States the administration of iodin between the ages of eleven and seventeen would almost completely prevent these enlargements. As to the best method of applying prophylaxis, I believe that at present in endemic goiter districts it should be a public health measure administered through the public school systems under medical supervision. The prevention of fetal, maternal and sporadic goiter would probably be the responsibility of the private physician. (Perhaps ultimately the household use of iodized or sea salt will become the preferred plan.)

The prevention of simple goiter means vastly more than preserving the normal outlines of the neck. It means, in addition, the control of those forms of physical and mental degeneration such as cretinism, mutism and idiocy, which are dependent upon thyroid insufficiency. Further, it would prevent the development of thyroid adenomas. The terminal metamorphoses of adenomas are far more serious than those of simple hyperplasia, since in addition to hemorrhage and cyst formation probably 90 per cent of the malignant tumors of the thyroid arise from these growths. Further, cases with long-standing goiter are apparently more susceptible to the development of exophthalmic goiter, especially around the menopause. These forms of exophthalmic goiter are often designated as secondary exophthalmic goiter or so-called toxic adenoma. The prevention of simple goiter would probably materially reduce these forms of exophthalmic goiter.

In conclusion, I should like to emphasize that simple goiter is the easiest of all known diseases to prevent and that it may be excluded, for all practical purposes, from the list of human dis-

eases as soon as society determines to make the effort, and it will require but a feeble effort.

DISCUSSION

OF SYMPOSIUM ON GOITER

Dr. Lawrence Litchfield (Pittsburgh): I was particularly pleased and honored when I was asked by Dr. Simonton to open the discussion on Dr. Marine's paper. Some of the oldest members may remember that for four or five years I was chairman of the committee on scientific work of this Society, having a large share in making up the program and for that entire time I was persecuting Dr. Marine to get him to talk to us about the thyroid. It was I who suggested him for this meeting. So I have been trying practically for ten or twelve years to get Dr. Marine to talk to us about the thyroid.

Now if I talk about Dr. Marine rather than about his paper it is because after he had been invited I went out and spent a day with him on Gun Hill Road and asked him if he would please leave me something to say and he promised me that he would and that he would leave to me the discussion of the effect of the prevention of simple goiter in cutting down the incidence of toxic goiter. I thanked him, but he has broken his promise in that he has brought in and cleared up that subject, so if I embarrass him it is his own fault.

I regard Dr. Marine as one of the most inspiring personalities in the medical profession of America to-day. From the time he left the medical school he has devoted his life to the subject of goiter and the reason he would not talk before when I asked him so frequently to do so was, not that he did not like to talk, but that he was not ready. What he has told you to-day is real wisdom. As I said yesterday, wisdom springs from doubt, the observation of phenomena and from experimentation, not from the study of tradition. Dr. Marine has devoted his life to the study of goiter, observation and experimentation and the legitimate doubt of all traditional theory and belief, and what he has given you to-day is the result of that work and is pure wisdom.

There is one question which I should like to ask Dr. Marine. In view of the facts that salt made by the evaporation of sea water has been proposed for general use as table salt on account of its content of iodin, and that in some districts the natives have an idea that it is a good thing to drink a half pint of sea water every morning before breakfast for a few weeks, on their summer vacation, I should like to ask Dr. Marine if sea water contains enough iodin if taken in that way to supply the necessary amount for the year. I should like to ask, also, if shad and salmon and other fish that spend part of their lives in the sea, develop goiter, as trout and fresh water fish do.

I heartily agree with Dr. Marine that the use of iodin in sufficient quantity should be made a matter of public health in all goiterous districts. It is not surprising, but is very lamentable, that these districts are so slow to realize this matter. Pittsburgh has not made a move in this direction and yet we have a great deal of simple and toxic goiter. It is only now, when we have a physician at the head of our city health department, that we hope to have iodin served regularly in the public schools.

I wish, on behalf of the Society, to thank Dr. Marine for coming down here from New York and giving us this most authoritative paper.

Dr. Henry D. Jump (Philadelphia): This valuable paper is so complete and its conclusions so positive that little is left to discuss. Since the introduction of the treatment of cretinism and myxedema by the administration of thyroid nothing has been done in the province of endocrinology of such practical value as this work of Marine. He has demonstrated without the shadow of doubt the truth of his conclusion "that simple goiter is the easiest of all known diseases to prevent." Outside of the demonstrated fact that iodin or its salts will prevent and in many cases cure simple goiter, two points, particularly, in this address are impressive. I deem it worth while to repeat these that they may become more fixed in our minds. The first of these is that simple goiter most commonly develops in fetal life, adolescence and pregnancy. Many of us who do not live in goiter districts, and who therefore do not see great numbers of these cases, are prone to be alarmed at the hypertrophy of the thyroid in adolescence. I recently saw a girl with a goiter of adolescence whose physician had advised its removal, because he believed in early surgical interference in exophthalmic goiter. He missed the point entirely that it was simple goiter of adolescence and could be helped by administration of iodin. The second is that prevention of simple goiter means prevention of mutism, idiocy and cretinism, which are dependent on thyroid insufficiency, and further that adenomas and exophthalmic goiter may occur in consequence of the simple goiter. While these conditions do not occur largely they are possibilities of grave import.

There are in Pennsylvania many goiter districts, or rather a widespread and irregularly formed district where this disease exists endemically. How prevalent the condition is, is not known, for no statistics have been gathered. So far as I know Marine's method has been used only by individuals and not on any large groups. It would be of great value to gather statistics in this district and to make an effort to institute treatment of all school children. I believe it is properly a function of this Society to stimulate such work through the county societies.

Dr. A. E. Roussel (Philadelphia): For a number of years past I have been interested in this subject, but perhaps more so in the subject of basal metabolism, which I take it is also included in this discussion. I am rather surprised that in goiter cases exhibited here to-day the basal metabolism has not been taken. That, to my mind, is an omission that should not occur in the present day. Basal metabolism has its limitations, as have other so-called instruments of precision, but it is almost a requisite in determining minor degrees of toxicity and hyperthyroidism, deficient thyroid secretion and myxedema. Perhaps, of the two conditions, more cases of myxedema are unrecognized than of toxic goiter. A good basal metabolism apparatus should be in every hospital; indeed, more than that, men working in lines in which it is valuable should make use of it not only in diagnosis, but as regards the questions of treatment and prognosis, in deciding when cases should be operated upon, and also when they should have x-ray treatment, which subject is to be discussed later on.

Personally, I have no doubt that Dr. Marine's experiments have been epochal in the prevention of goiter. I am not satisfied, however, from the results of a fairly large experience, that treatment by iodin in exophthalmic goiter is productive of good results, even in small doses, as he has recommended. I shall approach that subject very cautiously.

Dr. George W. Reese (Shamokin): It is very evident that we have all enjoyed the classical papers this afternoon. Nevertheless, I know that the man who has the genius of Homer, the sublime soul of Plato and the wisdom of Socrates believes that metabolism is a myth. Crile, the man who is doing more individual work on the thyroid, not in America but in the world, condemns basal metabolism — and I know whereof I speak.

The work of modern science is the substitution of facts for appearances and of demonstration for impression. In metabolism we have no concrete results, but a myth such as we had in barium treatment, and the time has come for the American profession to wake up. I have no personal grievance, as I never used the apparatus and do not know a thing about it (although I have treated 300 goiters without a death), but I am quoting the authority that does know something about it.

My position is this, and I advocated the same thing five years ago, that the medical profession, before it allows anything to be put on the market, whether it be a drug, a vaccine or an instrument, should get the approval of the American Medical Association and five of the best colleges in the country. In this way you will get results.

Dr. Marine (in closing): Relative to Dr. Litchfield's question regarding iodin in sea water and whether sea salt contains a sufficient amount of iodin to prevent goiter when such salt is used in average daily amounts, I would doubt it. Sea water contains iodin in the proportion of 50 parts iodin to 1,000,000 parts chlorine. In reply to his other question as to the presence of iodin in sea fish, there is iodin in all sea fish. That has been demonstrated in so far as the cure and prevention of goiter in brook trout is concerned. In experimenting with the latter we switched to a diet of hashed sea fish and that diet promptly relieved the goiter. All sea foods contain iodin. There is no authentic instance on record of the occurrence of goiter in animals living in the sea.

I was going to apologize for saying what I did regarding the abuse of iodin and dessicated thyroid, not only in the treatment of exophthalmic goiter but also in the treatment and prevention of simple goiter, but the views of other speakers make this unnecessary. I should like to leave this audience with the impression, in so far as my own view is concerned, that iodin and thyroid should not be used in any frank case of exophthalmic goiter and that in cases of simple goiter in women, particularly after puberty or around the menopause, these drugs should be used in minimum doses. I think that a great many of the cases of so-called toxic adenomas are primarily menopause phenomena made markedly worse by the injudicious use of iodin or thyroid. In other words, the trouble is caused by the menopause plus the use of iodin and thyroid.

I have spent a great deal of time working with the thyroid gland, and I think it is blamed for a great many more things than it is guilty of, and that the reason we as physicians blame it for so many ills is that it is superficial and capable of very rapid response by means of enlargement. If the suprarenal glands were as accessible and underwent as great anatomical changes, we would blame them for a thousand things. Thyroid enlargement is only a symptom.

In regard to the prevention of goiter in a state like Pennsylvania, I believe that long before we get to the question of preventing goiter, we need, as Dr. Litchfield has emphasized, a survey of the incidence of goiter. We need to know what the incidence is in any unit of population in representative parts, not only of this state but of others in the goiter districts. We can secure this information by utilizing the present machinery, namely, the medical inspection of the public schools. If we make a survey of the school population between the ages of 10 to 16, or from the fifth to the twelfth grades, we will get a cross section of the frequency of goiter and can then determine whether it is the proper thing to introduce preventive treatment as a public health measure or whether it had better be entrusted to the individual physician. With our present knowledge, I am firmly convinced that the practicing physician who has charge of the medical welfare of a family is at least morally guilty of professional negligence if he permits a single case of simple goiter to develop in such a family.

I wish to thank you, gentlemen, for the privilege of speaking before the Medical Society of the State of Pennsylvania. It has been a great pleasure.

(The remaining papers of the Goiter Symposium will be published in the May number of this Journal.)

THE CLINICAL DETERMINATION OF HEART SIZE*

JOHN W. BOYCE, M.D.
PITTSBURGH, PA.

This paper is devoted to the elaboration of three theses:

First, that cardiac percussion is essentially unreliable and inaccurate.

Second, that the x-rays are an accurate and practical method for determination of heart size or at least of two dimensions of the heart.

Third, that small changes in the cardiac silhouette have a more definite clinical value than is usually accorded them.

The first proposition it is worth while to discuss in detail, for it meets with almost universal dissent. Errors in cardiac percussion are common enough. But there is a universal tendency to consider them individual and personal, i. e., as due to lack of skill. Time will not permit discussion of the physical and anatomical facts on which I base a different view, except to exhibit a picture of Dr. Fetterolf's very illuminating section of the thorax at the level of the fourth rib and to ask "In the case of a small cylinder (the heart) inside a large one (the thoracic wall), just where can the 'edge' of the smaller cylinder be said to lie?"

As a striking failure of cardiac percussion in even skilled hands let us consider the undersized heart. Three generations ago Virchow described this from the dead house. He called it the hypoplastic heart, but to adopt that name commits us to a pathological theory not yet generally accepted.

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Many, perhaps the majority, of roentgenologists look on it as a mere anatomical peculiarity without clinical significance. Even so, no one can use the x-rays in the chest without noting how frequent and conspicuous it is. If cardiac percussion were accurate it would be as prominent in physical diagnosis, but it is nowhere even mentioned in the clinical literature of the preroentgen era. We are compelled to defer to roentgenologists and not to clinicians for an opinion as to its clinical value.

The position of the left border is much affected by very slight causes. The difference between the heart in the erect position and the heart in the recumbent position is familiar, but we constantly see reports giving the distance of the left border from the middle line very exactly in centimeters but not specifying whether the examination was made in the erect or the recumbent position. Such work is not exact even if the sacred centimeter is dragged in. Twenty years ago the Schott's were reporting an inch to an inch and a half difference in the position of the left border before and after a single Nauheim bath. Such changes in heart size without any change in clinical condition seemed incredible. But men who saw the Schotts' work believed it sincere and careful. It was not until Franz Groedel began his routine orthodiagraphic examinations that any one suspected that the difference was simply a lower position of the diaphragm, permitting a more vertical position of the heart.

My second proposition can be passed over, as it is generally accepted. Only the orthodiagraph or the teleoroentgenogram gives a really accurate silhouette; but the distortion in ordinary methods is constant and mathematical. Using always the same tube distance (as one is compelled to with a fluoroscope) the error is easily allowed for.

As to the value of small changes. Mitral stenosis can be definitely diagnosed by the x-ray alone—either positively or negatively. When uncomplicated it causes enlargement of the left auricle and none of any other part of the heart. On this point the following experiment was made. A dermatologist was called into the dark room. He has an unusually good eye for color but for several years has given no attention to cardiac pathology. A case of mitral stenosis, with the characteristic deformity of shadow, was shown, comparing it carefully with a plate of normal heart. Since that, five or six cases of mitral stenosis (the run of office work) have been shown him, mingled with a dozen or more hearts normal or presenting other lesions. In no instance has he failed to pick out the stenosis cases.

The diagnosis of functional murmurs must be presented from a theoretical standpoint, but these considerations have stood the test of twelve years' practical work. It is difficult to understand how any material valvular defect can be compensated without enlargement of part or all of the heart. If there are no symptoms of cardiac failure and no enlargement it seems a safe assumption that any murmur present must be a functional one, no matter how far this may conflict with preconceived opinions. A thread of fibrin across an orifice or a minute leak past a stiff valve edge may give a loud harsh murmur. But any real mechanical impediment to the circulation must surely result in hypertrophy. In general we know that systolic murmurs have very little diagnostic value but in practice we always accord them some attention. The presystolic murmur (except in enormously enlarged hearts) has been given almost pathognomonic value. A recent number of the *Journal A. M. A.* reports three cases having presystolic murmurs and thrills, but at autopsy no mitral stenosis and no enlargement. The great value of the x-ray in this regard lies in establishing the diagnosis of mitral stenosis when no murmur is present. It is a platitude that the presystolic murmur always disappears when auricular fibrillation is present and that it is very prone to disappear during any severe intercurrent illness, i. e., at the times when diagnosis is most important. If a patient first comes under observation at such a time, direct diagnosis of mitral stenosis is almost impossible. But the x-ray, showing a dilated heart with special predominance of the auricle, puts the diagnosis beyond question.

If these principles shall ever be generally accepted and the x-ray become a routine item in all chest examinations we will acquire the habit of gauging the severity of a valvular lesion by the amount of hypertrophy that is necessary to produce perfect compensation.

This leads us to a consideration not strictly germane to heart size. We are accustomed to diagnose cardiac failure by exertion dyspnea, hepatic swelling, or moist râles at the back of both lungs. These are crude methods. As Franz Groedel has recently pointed out, the first physical sign of cardiac failure is a haze of the lung due to passive congestion. In extreme heart failure this is marked—sometimes so deep as somewhat to obscure the cardiac borders. But in the slight degrees in which it has great clinical value it is very faint and will be detected only by those who have the habit of routine x-ray examination of all sorts of chests.

Certain basic principles are founded on observations which rest on cardiac percussion. If this is misleading, principles based on it should be discarded. For example, the theory that digitalis acts by restoring tonicity to a dilated heart has been ruled out of court because we often see striking benefit from it without demonstrable change in percussion dullness. But if percussion is not sufficiently exact to diagnose the undersized heart it could not possibly demonstrate such a difference. The whole question should be reviewed with exact x-ray determinations. Professor Christien has recently emphatically contradicted the cardiological dogma that it is only in auricular fibrillation that digitalis shows striking benefit and it is no longer heresy to question it.

If I am justified in looking on all murmurs as functional no matter what the location or distribution, if only the x-ray shows that there is no cardiac enlargement, then the whole subject of diagnosis of functional from organic murmurs requires reconsideration.

There are many facts in regard to heart size which should be more generally known than they are; for example, that a trained athlete shows diminished heart size on severe exertion. But we can scarcely expect progress in any of these lines unless my first proposition is established, i. e., that cardiac percussion is inherently inaccurate.

DISCUSSION

Dr. S. Calvin Smith (Philadelphia): Dr. Boyce is to be congratulated on the clear manner in which he has drawn our attention to the clinical value of the roentgen rays in appraising heart affections. To the first premise in the paper, namely, "Cardiac percussion is essentially unreliable and inaccurate," I readily subscribe, for I hesitate to accept a transverse cardiac diameter that is estimated by percussion alone. But when a heart border is located, not only by the first change in percussion note and by an increase in resistance, but also by actually feeling the outermost point at which the heart beat is palpable, I think we are safe in assuming that the left border of the heart has been fairly well estimated for routine clinical purposes. The x-ray has established the fact that the furthest point at which one can feel the outermost limit of precordial impulse determines the left border of the heart. This dictum holds true with some hearts. With others, the precordial impulse is, for various reasons, quite obscured, and a clinical estimate of heart size is not possible. In all doubtful cases the x-ray should be employed to determine the heart borders. I try to bear in mind, too, that a heart does not necessarily need to be enlarged to be a source of distressing symptoms. Small hearts will sometimes manifest most disquieting heart protests. And again, I feel that a heart does not always enlarge in a transverse direction; it sometimes seems to enlarge in the anteroposterior plane, in which event percussion is, as Dr. Boyce well says, misleading.

With the second premise of the essayist, namely, that "The x-ray is an accurate method for the determination of heart size," there can be only complete agreement.

In the third premise, which sets forth that "small changes in the cardiac silhouette are of great clinical value," Dr. Boyce refers to the x-ray evidences of passive pulmonary congestion as illustrating the point. I am sure that he does not mean to have us put a pathologic interpretation on such alterations in cardiac contour as are dependent upon posture, respiration, exercise, heart load, etc.

I agree that estimates of heart size should be accompanied by some phrase to indicate the circumstances under which the estimate was made—as "transverse cardiac diameter, by x-ray, tube distance blank feet, erect posture, equals blank centimeters"—although when the posture is not stated we can assume that the estimate was made with the patient erect, owing to its being generally known that the position of the heart is subject to postural shift when the patient reclines and, therefore, figures secured when reclining would be valueless.

Concerning the diagnosis of mitral stenosis, of such varying degrees of severity as are displayed in specimen jars of any medical museum, I would want more evidence than that afforded by the x-ray, electrocardiograph, stethoscope or any other instrumental examination, before settling on the particular valve affected and the particular deformity therein present. Mitral stenosis is a diagnosis so often made clinically, and so frequently repudiated at necropsies, that I have become chary of the term. If I made it after a full consideration of the individual's previous diseases and previous history; if there were distinctive findings in a patient with circulatory failure on inspection, palpation, percussion, mensuration and auscultation; if the x-ray and electrocardiograph yielded their characteristic findings, and if the clinical laboratory reports confirmed such dysfunctions as one expects in cases of circulatory failure, I might then hazard the diagnosis of mitral stenosis—and would feel most grateful towards the pathologist who confirmed the diagnosis at postmortem.

Dr. Howard G. Schleiter (Pittsburgh): I think that Dr. Boyce's papers are always interesting and stimulating because his familiarity with his subject is reinforced by a certain amount of healthy skepticism. His paper brings up a number of points of interest and dispute.

I agree with Dr. Boyce on the frequency with which percussion outlines are fallacious. In many cases, probably the majority, I believe that the x-ray findings and percussion findings agree. But in certain other instances it is impossible to make them agree even when we know how large the x-ray shadow is. It was for a time the custom in Sir James Mackenzie's clinic to record the size of the heart from day to day in chronic cases, without referring to the previous day's measurements. It was astonishing to note how the outlines made by the same observer varied from day to day. As it was most unlikely that this variation should be in the heart itself, one must conclude that the results of percussion were at fault.

With reference to the presystolic murmur, it has been taught for years that this murmur is produced by the contractions of the left auricle in the presence of mitral stenosis, and that in auricular fibrillation, the rhythmic movements of the auricle having ceased, this murmur will necessarily disappear. Of late some

doubt has been thrown on this view—first because it is believed by some observers that the auricular muscle is incapable of sufficiently strong contractions to produce the typical crescendo murmur, and second because in some instances of auricular fibrillation systole is ushered in by a crescendo sound which is difficult to interpret otherwise than as a presystolic murmur.

Dr. E. J. G. Beardsley (Philadelphia): I do not think that anyone in this audience is ready to disagree seriously with any scientific statement that Dr. Boyce has made. Simplicity and availability of clinical methods, however, possess very real advantages over more accurate and more scientific procedures that are not available to the usual practitioner. The location of the apex beat of the heart and the outline by percussion of the approximate borders will seldom lead an observer astray.

Dr. Boyce (in closing): Dr. Smith makes two strong points against me. The first is that in some cases we can actually palpate the heart. In these we determine the left border very accurately and definitely. The answer is that it is only in a minority of cases, and those mostly normals, that we can do this. If you attempt it as a routine you will soon find yourself palpating the area of impulse—which is quite a different thing. And the position of the left border alone is of little value.

Dr. Smith's other point is of more importance. He put it very gently. To state it more bluntly, many men, abler than I, have been as self-satisfied as I am about their diagnoses of mitral stenosis. At the autopsy table they found that there was no basis whatever for such self-satisfaction. If I had been lucky enough to get an autopsy in every case in which I have diagnosed mitral stenosis in the last twelve years it is probable that I would have met with some very disagreeable surprises. But checking up the fluoroscope against other clinical methods, it shows up well. And it is much easier to acquire skill with it, while it is applicable at times when other clinical methods temporarily fail altogether.

Dr. Schleiter questions the invariable failure of the presystolic murmur during auricular fibrillation. My statement that it does fail is merely orthodox cardiological doctrine. It often does, diminishing the value of auscultation at such a time. Its occasional apparent persistence would furnish a theme for an interesting discussion, which would, however, lead us too far from our present subject.

PULMONARY TUBERCULOSIS AND APPENDICITIS*

ALEXANDER ARMSTRONG, M.D.
WHITE HAVEN, PA.

One of the first to call attention to tuberculosis of the vermiform appendix, was Corbin, an English writer, in 1837. Since that time some fifty or sixty articles on this subject have been written. Among the most comprehensive of these are by Muller in 1910, Kinghorn in 1916 and Scott in 1917. All writers agree that this condition is relatively infrequent, but say that it is more common than formerly supposed and often overlooked.

It is difficult to secure accurate data as to the condition of appendices removed, because until recently a histological examination was rarely made.

In trying to find the most complete autopsy report on the subject among the references at my command, I found that the Phipps Institute Report (volumes 1, 2 and 3) contains a very careful record of all their autopsies in which the tissue of the appendix was examined microscopically. In this report White discovers the percentage of tuberculous appendices to be as high as 59. All of these patients, however, had died of advanced tuberculosis.

Nothnagel quotes the autopsy statistics of Fenwick and Dodwell, who found only 17 cases of tuberculosis of the appendix in 2,000 autopsies. This was not a histological study. Where a careful histological examination has been made, the percentage of tuberculosis appendices found ranges from 22 to 59.

Regarding the number of tuberculosis appendices removed by operation, it is again difficult to secure accurate data for the reason given above. Deaver believes he has seen it in only .2% of his cases, Murphy allows 2%, Herisson from 1 to 2%, Lockwood 2%, Fitz 3%, and Mayo 1.5%. Kinghorn states that of 28 cases operated upon, 7 or 25% were tuberculous appendices.

The complication surely occurs often enough to urge us to make a careful study of it, and it is the general impression that the removed appendix is more frequently tuberculous than our reports would indicate.

Hartwell cites a case of suspected tuberculous appendix which failed to show the same histologically, but he still believes it was tuberculous and quotes German authorities who claim that all hypoplastic cases are tuberculous, being secondary to a lesion elsewhere in the body. Silvestri found manifestations of tuberculosis in 45% of 103 persons with appendicitis. I have found only one authority who believed that the disease is usually primary in the appendix. The great majority state that it is secondary, usually to ileocecal disease. All admit the possibility of its being primary, but John B. Deaver doubts it. Howard Kelly cites a case of primary tuberculous appendix occurring in his own practice and mentions five others from literature.

The object of this paper is to call attention to the frequency with which patients who have been operated upon for appendicitis, develop

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pulmonary tuberculosis and to offer evidence to prove that the primary focus is often in the lung at the time of operation. I have proved that tuberculosis of the appendix exists and that it is usually secondary. That the primary lesion in most cases is in the lungs will be evident by what follows.

The connection of appendicitis with possible lung affection is rarely mentioned by surgical writers and if mentioned is not sufficiently emphasized to attract attention. During the past fourteen years I have been impressed with the frequency with which we find a history of appendicitis in patients who have been sent to White Haven with pulmonary tuberculosis. In looking up the records of 200 cases admitted to Sunnyrest and other private sanatoria under my care during the past two years, I find 25 who have had appendectomies, an incidence of 12½%. There have also been some cases who had definite attacks which did not come to operation. Kinghorn's experience is somewhat similar, as he states that of 727 patients treated during 11 years, 43 or 5.9% had appendicitis. In looking over the records of our large public sanatorium we find an incidence of six per cent. in the history of patients. The apparent discrepancy in percentages may be explained by inaccurate histories due to carelessness.

The above figures prove to my satisfaction that appendicitis precedes or is associated with pulmonary tuberculosis often enough to justify a survey of the subject.

It is not the purpose of this paper to comment on the treatment of this disease when it occurs, other than to endorse the surgical operation of removal. I say this despite the recently renewed discussion on the better results obtained by medical treatment.

In considering operation, however, I contend that the physician and surgeon should have in mind the frequency of the association of the two affections and the necessity of excluding the possibility of any pulmonary involvement before operation. This should be accomplished by having a careful history and physical examination made by one who is accustomed to examining and treating tuberculosis of the lungs. There may be rare instances where the urgency of the case, such as a fulminating pus appendix, will prevent this careful preliminary test. In most cases we have plenty of time, and if we realize that by carrying out this idea we will surely prevent many years of invalidism for our patients, the time will be well spent. Some of the older writers, notably Deaver and Kelly, state that the lungs should be examined where tuberculosis of the appendix is suspected, but in my experience this is rarely done.

After an operation where a tuberculous appendix is found, and we have proved that it is found in from 2% to 4% of operations, it is surely right and necessary to investigate the lung condition. This also in my experience has rarely been practised by either physician or surgeon.

As to the mode of operation and anesthetic to be used when tuberculosis of the lungs is found or suspected, there is still a divergence of opinion. Dr. Howard Kelly states that he prefers chloroform when there is bronchitis and advises cocain in chronic pulmonary cases. He quotes Cushing as having been the first to do an appendectomy under cocain anesthesia on account of a pulmonary affection. Muller advises against the use of ether and suggests spinal anesthesia.

The great majority of the present day surgeons are opposed to the administration of ether to any tuberculous patient, although I still occasionally hear of someone who is doing a great deal of surgery and who states that ether has no ill effect upon the lungs. Practically all phthisiotherapeutists are opposed to the administration of ether to their patients. This has been impressed upon them so many times by seeing the ill effects following operations where ether was administered, when the nature and severity of the surgical procedure could not account for the activity of the lung disease which followed. We therefore believe that there is no longer room for argument or doubt. Chloroform does not injure the lungs, but for well-known reasons, it is little used. As local anesthesia has become so well and favorably known and used that a member of our own Society has removed his own appendix with its aid, I see no reason why this anesthetic should not be used always. In the few cases in which the surgeon, for various reasons, cannot see his way clear to use local anesthesia, the use of gas and oxygen or spinal anesthesia can be substituted.

The other point I wish to bring out in this paper is the necessity for prolonging the convalescence after the appendectomy, where the lung condition is not satisfactory. Many of the 25 cases I have cited would not have active tuberculosis if they had been advised to prolong the rest period after leaving the hospital. This may not always be easy of accomplishment, but by explaining to the patient that by so doing he will probably prevent a long and serious illness,

we can usually persuade him to follow our advice.

CONCLUSIONS

1. Appendicitis is often tuberculous. While it may be primary it is usually secondary to a focus in the lungs, either active or dormant; rarely secondary to a lesion in the intestines.

2. Appendicitis is often followed by ill health which culminates in active pulmonary disease.

3. A careful history and physical examination, with x-ray if possible, should be made of all cases about to be operated upon, to discover whether there is present an active or latent lesion.

4. Local anesthesia, cocain or novocain, should be used with gas oxygen as second choice, and the use of ether should be condemned for these cases.

5. The convalescence should be prolonged to avoid subsequent activation of the lung lesions if present.

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh): I greatly enjoyed listening to Dr. Armstrong's paper and I feel that he has very rightly emphasized certain phases of this subject which we would do well to bear in mind more frequently. Of course, as Dr. Armstrong has said, when an autopsy is done on a case of tuberculosis, and tuberculosis of the appendix is found, such records for the purpose of our discussion are relatively negligible. The disease is so far advanced that it is not surprising that the appendix shows involvement along with the other organs of the body.

Regarding the clinical diagnosis of appendicitis in connection with pulmonary tuberculosis, acute appendicitis presents just the same symptoms and signs as in the nontuberculous case. On the other hand, there is no way of recognizing tuberculosis of the appendix as such. Its presence can only be suspected, and as shown by operation records, its incidence is low.

Now Dr. Armstrong also called attention to the fact that a number of tuberculous patients, varying between five and twelve per cent., gave a history of previous appendicitis. While I am not able to present any figures, it is my impression that, appendicitis being so common a disease, one might find a similar percentage in the histories of people having other diseases or of people who are in good health.

Regarding an examination of the chest beforehand, I feel that here Dr. Armstrong has touched on a very important point. Of course, it is common practice to examine the lungs before any operation involving a general anesthetic, in order to rule out any bronchitis, pneumonia, or other gross lesion. But a careful routine examination of the apices is less common than it should be. Such examinations are essential to prevent cases of pulmonary invalidism, having as their starting point the administration of a general anesthetic.

When presented with a clinical picture of acute appendicitis occurring with pulmonary tuberculosis, there is no room for doubt as to the proper procedure. The appendix must be removed. But a question arises in those cases of appendicitis which are not of the acute variety. These cases are often difficult of diagnosis. They are characterized by digestive changes, loss of appetite, loss of weight and strength, anemia, and may be confused with the early stages of pulmonary tuberculosis. It is also to be remembered that a chronic or latent appendicitis may be aggravated in the presence of pulmonary tuberculosis which, in the absence of tuberculosis, might remain latent and do no harm. In these cases the resistance of the patient is still further lessened by the presence of the appendicitis, as it would also be in the presence of any other focus of irritation or infection. By removing the appendix the resistance of the patient can be increased. In the nontuberculous individual a chronic appendix may be removed at a convenient time, but the appendix should be promptly removed in a tuberculous case for the purpose of removing a source of irritation and increasing the patient's resistance. Such operation depends of course on whether the patient's condition will permit it, but it has been found that tuberculous patients, particularly those undergoing sanitarium treatment, stand operation very well.

So far as anesthetics and prolonged convalescence are concerned, I am thoroughly in accord with Dr. Armstrong.

NASAL DIPHTHERIA*

J. DONALD IAMS, M.D.

PITTSBURGH, PA.

I do not suppose that anything I may say is new in any particular. Many others have doubtless had more experience in this disease than I. My apology for presenting this paper is the frequency with which I have encountered this location of the membrane in the past year, and the reasons, as I believe, for such frequency. I wish also to stimulate, if possible, the more routine taking of nasal cultures.

It was the teaching when I attended college that nasal diphtheria was a comparatively rare and serious type of the disease; that the cases were usually more toxic and required massive doses of antitoxin. Many authors to-day describe two distinct varieties of the disease—one serious and tending to be toxic, and the other very mild, with much exudate, but with little constitutional disturbance. Osler describes these two forms. Stumpell says, "Diphtheria extends very frequently into the nose. This, though not in itself dangerous, is usually a sign that the

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case is a severe one." Butler, in his "Diagnostics," says, "The general symptoms are usually, but not invariably severe." Trumpp, of Munich, ascribes to both forms a mortality of 60% for the severe variety. Fischer says, "No form of diphtheria is more fatal than the nasal variety. When the local affection is confined to the nose the outlook is not good."

I believe that the impression still prevails—at least, among many of the profession—that the location of the membrane on the nasal mucosa is quite infrequent, and when found the outlook is grave. This is due to a large degree to the symptoms as given in the average textbook. The impression one gets is that the patient is usually very ill, is toxic, with a bloody nasal discharge and excoriation of the upper lip. While one meets these symptoms all too frequently, I believe that they are usually found in cases where the infection has been present for some days at least. If their appearance is awaited, many cases will be overlooked, the severe ones only diagnosed, and the mortality will indeed be high.

We know that we can no longer trust our eyes, not to mention our nose, in the detection of faucial diphtheria. Many cases we know cannot be differentiated from follicular tonsillitis, except by culture. The symptoms are often exceedingly mild. In the schools of Pittsburgh, during the 1921 and 1922 school term, where 13,841 throat cultures were taken, 200, or 1.44% were positive.

In Pittsburgh, all children in school complaining of sore throat, no matter how mild, and all cases returning to school, if there is any suspicion that an inflammatory condition of the throat has been the cause of their absence, are cultured and sent home to return the following day. Also, where a case of clinical diphtheria occurs in a school room, the entire room is cultured. Hence the large number of cultures. Some few that gave positive cultures were undoubtedly carriers. Some few may have had the pseudo bacillus in their throats. The majority of the 200 cases, however, were undoubtedly mild faucial diphtheria not ill enough to see a physician.

During the same period of time 696 nasal cultures were taken. Of these, 60, or 8.6%, were positive. Had every child with a rhinitis been cultured, the percentage would, of course, not have been so high. Only those were cultured who had bloody nasal discharge, crusting of the alae, or were otherwise suspicious. Nevertheless, of all the positive cultures obtained in our schools, 260 in number, 200 were throat cultures and 60 were nasal cultures. Had a more intensive nasal culturing been done, it is probable that many more would have been found. And while the percentage per number taken would have been reduced, the percentage of positives would have been increased. Most, if not all, of these 60 children had had no medical attention and had not been seriously sick.

In the past ten years 911 cases of diphtheria in which the membrane was confined wholly, or at least largely, to the nasal mucosa were admitted to the Municipal Hospital of Pittsburgh. This is between 10 and 15% of all cases showing positive diphtheria cultures treated during that period. Unfortunately, the total number admitted is not available. The duration of illness before admission ranged between one and twenty-two days. The symptoms were classical, including excoriation of the upper lip, bloody nasal discharge, fullness of the nose, visible membrane, etc. Seventy-four per cent. of cases showed positive cultures and 9.5% remained positive for a sufficient length of time to be classed as carriers. Of these 911 cases the mortality was 2.78%. The general mortality of all cases treated was about 5%.

The statistics of the Municipal Hospital seem to bear out the theory that nasal diphtheria is not common, in that it occurred in but 10 to 15% of cases. Further considering, however, that these patients came almost entirely from our slums, and in most instances a physician would not be called unless the symptoms were severe, these 911 represent rather the number of severe cases than the actual number with the infection in this location. I think it also safe to assume that, in general, some days had elapsed before the physician was finally called; therefore the classical symptoms. The mortality of 2.78% compared to 5% for all cases tends to prove that even in late cases the mortality is quite low if sufficient antitoxin be administered.

The profession at large is gradually, all too gradually I am sorry to say, being awakened to the advisability of culturing all sore throats, however mild. They have learned not to wait for a membrane on the throat of large area and severe constitutional symptoms before making a diagnosis and administering antitoxin. Throat culturing of large numbers in our schools and elsewhere has proved that there are many mild cases, scarcely ill at all. I believe that the same holds true of the nasal variety. I believe that it is a much more frequent location for the membrane than is commonly supposed, and that the reason more cases are not found is because the possibility is not considered and sufficient investigation not made. I believe

that visible membrane, bloody nasal discharge, excoriation of the upper lip and toxicity are late symptoms and should no more be waited for than the extension of the membrane to the pillars of the fauces in tonsillar infection. If these symptoms are considered essential, many cases will be missed and the mortality necessarily increased.

REPORT OF CASES

During the fall and winter of 1921-22, I saw 40 cases with positive diphtheria cultures; 15 of these positive cultures were nasal, or 37.5%.

The ages of these patients with nasal infection varied from 9 months to 12 years.

In the three youngest, whose ages were 9, 12, and 18 months respectively, the infection had apparently, from the history, been present for upwards of two weeks. They each had had temperature and bloody nasal discharge. One had, when first seen, marked excoriation of the upper lip and visible membrane. This later case was rather toxic. The others showed only slight evidence of serious illness. All refused antitoxin and all recovered.

Two other cases, a girl aged 8, and a boy aged 10, showed visible membrane. The girl, S. G., had an easily diagnosed faucial infection. She received her antitoxin within the first 24 hours without waiting for a report from her culture, and it was not until the following day that I noticed a silght nasal discharge not bloody in character. Upon examination I discovered a membrane all but plugging one nostril. As her temperature was practically normal, I gave no more antitoxin and she made an uneventful recovery.

The boy, N. H., had a coincident scarlet fever. The membrane plugged one entire nostril, and he had been sick 36 hours when first seen. He had some nasal discharge which was not bloody. Forty thousand units of antitoxin were administered. Though he was quite ill, he made an uneventful recovery.

Seven cases were cultured, having a mucopurulent nasal discharge with or without crusting of the alae and some excoriation of the upper lip. All claimed to have had but a "bad cold" and none had apparently been seriously sick. All refused antitoxin and recovered.

The last three cases were the most interesting. For several weeks periodic cases of clinical diphtheria had been appearing about every ten days to two weeks in a certain school room in one of our public schools. After each new case the throat of each child in the entire room was cultured. Several carriers were found and quarantined. It became evident, however, that the source of the infection had not been found. A combined throat and nasal culture of each child was finally done. All the throat cultures were negative. Three children, however, had positive nasal cultures. When these children were removed no more cases appeared during the remainder of the term. These children had been constantly attending school and beyond a slight nasal discharge, so common during the winter months, showed no evidence of illness. One of these children infected two members of his own family, who had faucial diphtheria.

I am well aware that this large percentage of nasal diphtheria in my cases may have been partly coincidence. As no virulence tests were possible, some of the bacteria may have been of the pseudodiphtheria variety. However, I believe most of the cases were found because I was looking especially for them, and that others may have exactly the same experience.

CONCLUSIONS

While I realize that the number of cases I have reported is perhaps too small from which to draw any positive deductions, I feel that if routine nasal cultures were taken on as large a scale as are those of the throat, the following conclusions would be justified:

(a) That primary infection of the nasal mucosa with the diphtheria bacillus is not infrequent.

(b) That it is often exceedingly mild and is not diagnosed because the possibility of its presence is not considered.

(c) That the symptoms as outlined in the average textbook, with the exception of nasal discharge, either do not appear at all or are late symptoms and are evident only after some days.

(d) That the theory as to the extreme toxicity of this type was derived largely from the fact that only advanced and serious cases were diagnosed.

(e) That the mortality is at least no higher than in the faucial type if sufficient antitoxin be given.

(f) That all cases of severe rhinitis, particularly if unilateral, should be cultured.

(g) That until importance is given to nasal culture equal to that now given to throat culture, many unexplained infections are bound to occur.

(h) That, since many cases are undiagnosed, epidemics will not be controlled until more intensive nasal culturing is done and its importance recognized.

DISCUSSION

Dr. Edward L. Bauer (Philadelphia): It surprised me to know that it is not more generally known or widely felt that nasal cultures are important. In our Department of Public Health we want the nasal culture as well as the throat culture routinely. We urge our medical inspectors to take these cultures as routinely as throat cultures are taken. It is true that a good many of these are of a chronic type, and while membrane may not be seen, there is generally some membrane, more or less extensive, to be found in the nasopharynx.

The old thought that nasal diphtheria was more virulent than other forms still has its adherents, but I think that the feeling is that the blood antitoxin content will help us to establish the intensity of infection with an organism of definite virulence. In other words, one child having an organism with a definite virulence will get a severe attack, while another child who might harbor the same bacillus will not be so severely attacked. We can have diphtheria in different parts of the body, but I do not believe that we can, because of the location of the primary lesion, prophesy the degree of severity. The length of time the patient has had an opportunity to acquire a circulatory toxemia must be considered, and whether the patient has a natural blood antitoxin content or a passive immunity from an injection of antitoxin.

All these things must be taken into consideration and it therefore makes it rather hard to say whether one location is more severe in its clinical aspects than the other. The truth of the matter is that the nasal type is overlooked more frequently, and it is overlooked because the lesion may be in the nasopharynx and not on the septum. It behooves us to make early diagnosis and administer antitoxin promptly and thereby minimize the severity of all cases.

MISTAKEN DIAGNOSIS IN CASES OF SYPHILIS*

J. ROSCOE ELLIOTT, M.D.

LAUREL, DEL.

A paper prepared by a general practitioner, particularly in the rural districts, must of necessity add very little to medical science in the way of research and investigation. The reasons of course are obvious. The general practitioners do not see the great number of patients afflicted with the same ailment as one who has the advantages of the wards in a large hospital. They see a case now and then, but not in sufficient numbers to warrant any very conclusive deductions; consequently they are not in position to do any meritorious research work with the patient in the home. Their laboratory facilities are limited and their bedside notes and records must be curtailed without the assistance of a nurse, and particularly when a patient is observed for only a short time once a day, or sometimes only once in two or three days. But the thing the physicians can do and the thing they should do is to keep themselves well posted and put into practice every modern therapeutic measure which comes from those who do have facilities for research work, and measures which have been found to have a real value. By so doing they not only become familiar with the newer methods of treatment, and thereby corroborate or disagree with the conclusions of investigators, but they strengthen or weaken the chain of evidence by their correctly reported observation. We believe that the rural physician should report his interesting cases much more frequently than he does, making a point to report his failures as often as his successes.

Many years ago, Dr. William Osler made the statement that if a physician understood tuberculosis and syphilis thoroughly, such a physician could treat the negro race very efficiently. It has been a generally accepted fact that these two diseases have been very prevalent among the American negroes, and it is only in later years that we have come to learn of the great prevalence of syphilis in the white race in this country. It is not the outstanding case of syphilis of which we wish to speak, namely, the textbook picture of primary sore, secondary symptoms and tertiary lesions, but rather that great host of cases who consult us with symptoms referable to every system in the body, and yet symptoms which are typical of no specific disease—those cases which jump from doctor to doctor, being treated by this one for some heart or kidney lesion, by another for gastro-intestinal trouble, by still another for rheumatism, and yet another for tuberculosis or neurasthenia, until finally some fellow decides to do a Wassermann and finds it positive. We all see these cases. Our tendency is to make a snap diagnosis by spending three or four minutes in the study of the case, and three or four weeks in its treatment instead of reversing the procedure.

There is probably no disease which simulates so many diseases as syphilis, and tuberculosis is one of the diseases it imitates most often. We learn by our mistakes, or we should at any rate, and during the past two months I have had two cases come under my observation while doing the work for the Delaware State Tuberculosis Commission which were diagnosed as tuberculosis by me, but which proved to be syphilis. The error was discovered in one case by myself, but in the other it had to be pointed out by a Philadelphia surgeon, much to my chagrin, after I had gone so far as to advise the amputation of a foot in a small girl. The mistake in this case might have been so serious, indeed it came very nearly getting by the Philadelphia surgeon, that it seems worth while to me to report the case,

*Read before the Medical Society of Delaware, Dover, October 9, 1922.

together with the reason for the mistaken diagnosis—a reason which is not excusable, and yet a reason for errors made in a great many cases of diagnosis. I failed to take a careful history, but simply accepted the diagnosis of a nurse who had gotten her information from a surgeon who had operated upon the child, and who had made a wrong diagnosis.

A little girl was brought into my office a few weeks ago by a nurse for what was supposed to be tuberculosis of the ankle. A few weeks previous to this, the child had been a patient in a hospital and had been operated upon, with the hospital records showing that she was suffering from tuberculosis of the ankle. The joint had been opened and the bone curetted. When she came into my office she wore a plaster cast, put on by the surgeon who had operated upon her. The nurse told me the story, gave me the hospital record, and I accepted the diagnosis. I changed the cast from time to time until finally the ankle grew very much worse, broke down and left an ugly discharging wound. We felt that there should be some more necrosed bone removed, so we had an x-ray made, with the report that there was rarification of all the bones of the foot with considerable absorption of the lower end of the tibia. Thorough opening was advised to remove the necrosed bone, and it was suggested that rather large doses of tuberculin be used. The condition grew rapidly worse and it looked as though the whole foot would slough off at the ankle. It seemed as though amputation was the only resort. We decided, however, to send her to a hospital at a seashore for treatment, and she stopped over in Philadelphia en route. The Philadelphia surgeon saw her, took our diagnosis, agreed that amputation was practically all that could be done, but decided to watch her for a few days and clean up the suppurating wound as much as possible before amputating. In the meantime, some one very logically did a Wassermann, which was found four plus. She was placed on intensive mercurial treatment, together with neoarsphenamin in rectal suppositories. In eight weeks the ankle had entirely healed and the general condition of the patient was much improved.

The great lesson to be learned in this case is the fallacy of accepting the diagnosis of another person, regardless of how evident the case may seem at first glance or how much confidence you may have in the diagnostic ability of the other physician. The same mistake was made all the way down the line from the surgeon who first operated upon her to the nurse who brought her to my office with the hospital record. I, in turn, diagnosed the case for the x-ray man, and the Philadelphia surgeon for a time, at any rate, accepted the diagnosis we passed along to him.

It was not a case of not being able to make a diagnosis, for any one of us had sense enough for that, but it was merely our confidence in the ability of the other fellow that made us accept his decree. Indeed, after the true diagnosis was made, one wondered how such a mistake could have gotten by us, since the condition looked very much more like syphilis than tuberculosis.

Moral: 1, take your own case history; 2, make your own examination; 3, accept the diagnosis of no one until convinced it is a correct one; 4, when in doubt, have a Wassermann test made, and when not in doubt, still have a Wassermann test made.

The second case about which I wish to speak is that of an adult male negro who had been at work in Baltimore, and whose occupation was that of a stone cutter. His history was about as follows: Until six months previous, he had been, so far as he knew, in perfect health, but at that time he began to have a cough, feel tired and have more or less malaise. He applied for treatment at one of the best out-patient clinics in Baltimore, was gone over carefully, according to his story, and told that he had a bronchitis, due probably to the inhalation of stone dust. He kept at work for two months, reporting weekly to the dispensary for observation and treatment. At the end of the two months, he had grown so much worse, lost so much weight, had so much temperature, coughed so incessantly and breathed with so much labor that he was told that he probably had consumption, and that his only salvation was to get into the country, and he was advised to leave at once, which he did. Just in passing, let me say that if a great many physicians would say, "I don't know" to their patients, simply be honest with them, we who are in the country would not see so many patients who, when we are called in to see them, meet us with the salutation that their doctor in the city said that it was imperative that they get into the country. It seems to be a sort of unwritten law with some physicians "when stumped" to advise "go to the country."

This negro came to the country, and for three months tried to live in the fresh air, eat nourishing food and abide by his general instructions for a cure. He was treated by a local physician, and told that he would probably not get well. The Baltimore diagnosis was handed down. He finally spent all of his money, and then heard that the Delaware State Tuberculosis Commission would treat him for nothing, provided his regu-

lar physician did not care to treat him further, since his funds had been exhausted. There was no difficulty in arranging this matter, so I visited him and was told the story I have just repeated.

On examination, there was no evidence of his having lost a great deal of weight. He looked sick. He was very dyspneic, respirations very shallow, thirty-eight to the minute. His temperature was 102, coughing incessantly, and expectorating a material mixed with blood. He sweated profusely at night, and was very hoarse, which seemed to be getting progressively worse. His chest examination was a difficult one to make. His breathing was very shallow, so that very little could be elicited, except many râles throughout both chests. There was something about it, however, which made one feel that it was not a clear picture of tuberculosis. You felt that there ought to be a great many more physical signs in the lungs of a man so sick with tuberculosis. And yet, with the history, occupation, race, progress, and an examination in a good Baltimore hospital, it seemed a safe guess. His sputum was negative for tubercle bacilli.

We went along this way for several days, during which time the patient grew worse and suffered a great deal of chest pain. Finally, I discovered a tremendous scar on his glans penis, evidently the result of an old chancre or chancroid, which he told me was of six or seven years' duration. Here again, a careful history had not been taken, and a less careful examination made. I had fallen in with the diagnosis of a Baltimore hospital, in which I had the utmost confidence. A Wassermann was made immediately, and reported four plus. The patient was given 0.9 gms. neoarsphenamin for eight weeks, together with mercury intramuscularly. At the end of eight weeks he did not present an abnormal sign or symptom referable to his chest, and had apparently regained his normal health. He insisted on going back to Baltimore to work, and did so, stating that he would report to the dispensary for observation and treatment. I have no further report on his case.

Here is but another case of a syphilitic condition of the lungs diagnosed tuberculosis and a patient who nearly reached death's door, simply because an accurate history was not taken, a thorough physical examination was not made, and an erroneous diagnosis of someone else was accepted as absolutely final and correct.

THE RISK

Frosh (after attending a hygienic lecture): Some terrible things can be caught from kissing.

Second Frosh: Right! You ought to see the poor fish my sister caught.—*Cornell Widow.*

SELECTIONS

SOME COMMENTS ON RADIUM TECHNIC

W. H. GUY, M.D., and F. M. JACOB, M.D.

PITTSBURGH, PA.

The beginner in radium therapy may obtain some fundamental facts regarding radium therapeutics from others but he must finally develop his technic by experience. In dermatology he usually procures a plaque and immediately becomes saturated with theory. He follows more or less closely certain instructions regarding screening or lack of the same and applies his high-priced toy for varying lengths of time to various types of disease. He is really surprised the first time he sees a reaction and further is quite happily shocked to find that he is obtaining some therapeutic results. As time passes he appreciates more and more the value of filtered radium, but nearly always undertreats, particularly where a destructive effect is desirable. He learns that very light filtration is indicated in certain cases and heavy in others. He quickly learns that short applications with thin filters produce reactions quite out of proportion to those obtained with much longer applications through heavy filters. He sees therapeutic results obtained without inflammatory reaction in some cases, while in others he comes to realize that a good reaction is prerequisite. He becomes lost in the maze of milligram hours, millicuries, lead, brass, glass, aluminum and rubber screens, alpha, beta, gamma rays, distance, biological action, etc., but continues the rather uphill fight until he evolves a technic that to him is more or less satisfactory.

Then he learns that if he is going to do the good work he is capable of he must have better equipment and, therefore, buys more radium, usually in the form of tubes and needles. Then he has to begin all over and work out a new technic because he is dealing with a larger amount of the element completely screened so that only the gamma rays or at most the gamma and the highly penetrating beta rays are available from a focal point instead of from a surface. In the case of needles the problem is further involved because the method entails hypodermic introduction of the applicator. And when finally he is satisfied, he finds considerable difficulty in telling others how he obtained his results.

This paper is dedicated primarily to the novice but is offered as a plea for the use of understandable descriptive terms in reporting

results obtained in the treatment of disease with radium.

PHYSICS; GENERAL CONSIDERATIONS

In this country radium is supplied in various types of applicators measured in terms of actual radium element contained. The sulphate, bromide and chloride are available, but the sulphate is preferable because the others are hygroscopic, with evolution of gases, and thus have a tendency to explosion with a loss of the radium. Radium gives off invisible radiations constantly and without sensible variation. Alpha rays are the least penetrating, being absorbed by a thin sheet of writing paper. Where they come in contact with the skin they produce a superficial reaction without being of any therapeutic value. They are usually absorbed by the glass walls of containers or by the holding material of applicators. When additional screening is necessary for their removal a thin sheet of writing paper or rubber will suffice. Beta rays vary from those which barely penetrate thin-walled glass containers or the surfaces of plaques, to those that are absorbed only by several mm. of brass. Beta rays are of service therapeutically in certain superficial conditions—in fact they produce results in certain conditions where gamma rays fail. Gamma rays are the most highly penetrating of the rays of radium, and are analogous to x-rays except that they have four times or so greater powers of penetration. This type of radiation is the most important in radium therapeutics. Gamma rays are utilized by interposing substances between the disease tissue and the element capable of absorbing all alpha and beta rays. These substances are spoken of as filters. Depending upon their density and thickness they absorb varying quantities of beta rays. A large variety of filters are available, but there is little of value in more than one, because by preference either beta or gamma rays are used. Multiplicity serves only to confuse the beginner. He had much better have only one filter, for example 1.2 mm. of brass, this being sufficient to absorb practically all beta rays. When beta rays are indicated a thin layer of rubber only is advised. When gamma rays are indicated it is advantageous to screen completely.

EFFECT OF QUANTITY

Inasmuch as radium produces rays at an unvarying rate, necessarily the amount of energy liberated is directly proportional to the amount of element involved. Further, one may anticipate that equal results will be obtained with, for instance, 50 mg. for one hour and with 25 mg. for two hours. While such is not exactly the case, this rule holds within certain limitations, it being necessary to point out that the result obtained by using 1 mg. for 100 hours is not likely to be the same as with 100 mg. for 1 hour, because the time consumed in delivering the total dose to the cell determines to some extent the resulting reaction, as does also the arrangement and bulk of the element. However, in the applicators ordinarily supplied, the amounts of radium are sufficiently large that the man with a comparatively small investment may duplicate the results obtained in ordinary conditions by his more affluent neighbors by making longer applications. I make this statement in cognizance of the fact that it will be noted as heresy, particularly by those with 200 mg. or more of radium. Finally it is to be remembered that intensity varies inversely as the square of the distance is increased or diminished. Thus one necessarily determines biological reactions at certain distances and estimates dosage accordingly when the distance is changed.

TYPES OF APPLICATORS

Radium is supplied in different types of applicators to meet certain indications. In dermatology, surface lesions of varying size are to be treated and in some instances beta rays are definitely indicated; therefore, the element is evenly spread in a glaze or varnish in definite proportion to the size of the applicator. The standard strength of these applicators is 5 mg. to each sq. cm. The applicator most frequently used is the half strength flat applicator 2x2 cm. Full, double, or even greater strength applicators may be used in order that the time factor may be shortened. Plaques should be screened with a thin layer of rubber or similar material in every case to cut out all alpha rays and secondary radiations. Where beta ray applications are desired, the plaque is then applied directly to the lesion for varying lengths of time, depending on the type of the pathology.

One should take care lest he overlap with successive applications, and thus doubling dosage produce severe burns. Beta ray applications are indicated in certain angiomata and discoid lupus erythematosus and are sometimes serviceable in psoriasis, lichen chronicus circumscriptus, verruccae, keratoses, localized lichen planus, etc., and in some cases of superficial epitheliomata. In my hands only lupus erythematosus and angiomata respond better to beta than gamma rays, they being used in other superficial conditions because of a shorter time factor, and ease of application. An unscreened plaque

should not be left on the skin longer than a half hour if a good cosmetic result is desired. Longer applications cause heavy reactions and subsequent telangiectasia and scarring. Further, additional treatments should never be given until the reaction from the first application has subsided. It is to be noted that in all of these cases radium is applied directly to the pathology so that, therefore, distance is not considered in computing dosage. With full or double strength applicators the time factor is correspondingly shortened.

THE SCREENED PLAQUE

Where more than a comparatively superficial action is necessary, filtered rays should be utilized. There being no good reasons for half way measures, screening should be such as to allow practically only gamma rays to penetrate. Different substances are utilized, being used in varying thicknesses according to their density. Brass is effective in thickness of 1.2 mm. and is probably more used than any other material. It is to be remembered that all metallic substances exposed to gamma rays emit secondary beta rays. Those rays are comparatively difficult to demonstrate clinically, probably the most frequently noted example being that of the aggravated reaction at the edge following a naked plaque application to the skin. Secondary rays have comparatively little power of penetration and in addition to producing reactions on the skin they limit the amount of gamma rays that may be applied. They may be eliminated by a thin layer of rubber or similar material. The applicator thus screened with brass and rubber may be applied to different types of pathology for varying lengths of time.

As in the case of x-rays, the intensity of gamma rays of radium varies inversely as the square of the distance is increased or diminished. This fact is to be constantly borne in mind when estimating dosage.

COMPARISON OF SCREENED PLAQUE AND TUBE APPLICATIONS

It will be realized that in all filtered applications a definite distance has been established, amounting in plaques with brass and thin rubber filters to approximately 2 mm. Tubes are usually screened with silver and brass of a combined thickness of about 1.5 mm., additional distance being added depending on the thickness of rubber or other materials utilized. Thus minimum distances, whether using tubes or plaques, is approximately the same. Therefore, utilizing minimum proper screening, dosage delivered will necessarily be estimated accordingly. Depending upon whether flat applicators or tubes are used, equivalent dosage may be comparatively readily estimated, remembering that in the one case radiation is from a focal point while in the other an even radiation of a definite surface is available. The plaque delivers a dose composed of parallel and cross rays to a definite area, while from tubes the greatest intensity is necessarily just beneath the tubes. In small lesions this variation may be practically disregarded. While this basis of comparison is open to just criticism on the basis of inaccuracy it is suggested as of practical value in simplifying the question—in other words as a working hypothesis. In larger lesions successive applications of the plaque may be utilized, taking care not to overlap and thus double dosage. Tubes will be placed at intervals, overlapping of rays from the various focal points determining an approximately even application. The location and extent of the pathology will determine to a large extent the distance between these focal points. By a mathematical computation it may be shown that uniform dosage will be obtained at a depth representing seven-tenths of the distance between the points of application. Thus, by estimating the depth and extent of the pathology, proper distance between surface applications may be comparatively easily estimated.

EFFECT OF DISTANCE

Another fact of importance to remember is that it is advantageous in all cases requiring administration of heavy dosage to pathology beneath a healthy skin to place the element a few millimeters more than usual from the surface so that the discrepancy between surface and depth dosage may not lead to severe surface burns. For instance, if heavy dosage is required to a lesion 2 mm. beneath the surface, and the element be placed at the minimum distance from the skin (2 mm.), depth dosage will only be one-quarter of that passing through the skin, but if the element be placed 8 to 10 mm. from the skin, the time factor must be materially increased, and there will be but little disproportion between the dose delivered to the skin surface and the pathology.

NEEDLES

By utilizing radium in needles one is able to bury the element in pathological tissues. Needles are usually placed about one-half inch apart to obtain an even saturation of the tissues, This method has many advantages over surface applications. In the first place, all of the rays are utilized and therefore dosage estimation will be about treble surface applications with

equivalent amounts of radium and time. Secondly the subcutaneous tissues will tolerate three to four times that which may safely be passed through the skin, and therefore pathological tissues particularly resistant to radiations may be given lethal dosage without damage to the skin. With such advantages it is difficult to understand why this method of application is not more used.

DOSAGE

The most frequently mentioned unit of dosage measurement is the milligram hour, this being the amount of gamma rays delivered by one milligram of radium in one hour. As noted before, time and amount of radium element are within certain limits interchangeable to determination of total dosage. Thus most authors speak of so many milligram hours as a more or less definite fixed dosage. Such statements are quite inaccurate. In the first place it should be stated whether the element has been fully screened or otherwise, and the distance between the element and the pathology given as accurately as possible, because of the effect on dosage of the law of inverse squares. Obviously a lesion 2 mm. beneath the surface will receive only one-quarter the surface dosage when the thickness of the screening, etc., is approximately 2 mm. It would be much better if in each case dosage was estimated in milligram hours actually delivered to the pathology. This would necessitate some mathematics, but would serve to simplify dosage for the other fellow so that if you said that 125 mg. hrs. to a basal cell epithelioma cured, you actually mean what you say—so many milligram hours to the pathological cell. As previously noted the minimum distance with tubes and plaques is approximately 2 mm. and this is offered as a basis for estimation of dosage. Thus 50 mg. fully screened, applied for 4 hours at 2 mm. would be credited as 200 mg. hrs. To a lesion lying 2 mm. beneath the surface, however, actual dosage would be estimated according to the law of inverse ratio of proportion at 50 mg. hrs. Such estimates could be made fairly accurate, but a further correction should be made in deep work. It has been estimated that absorption of rays by tissues, independent of distance, is at the rate of about 12% to each inch. Such correction can be readily made, but for practical purposes in work that the dermatologist ordinarily sees, may be disregarded. From a practical standpoint, for the sake of comparison in dermatological work, the dose delivered to a skin surface is most important, variations of the factors discussed above determining the intensity, spread and type of radiation requisite for the individual case. To have any real value, reports should include in every case the amount of radium used, the time applied, the screening and the distance from the skin. When needles are used the amount of radium in each needle, the number of needles used, the distance separating them and the length of the application should be mentioned. These suggestions of course apply only where the element itself is used.

Suite 7026, Jenkins Arcade Bldg.

PREGNANCY AND LABOR IN VERY YOUNG AND ELDERLY PRIMIPARAS*

PHILIP F. WILLIAMS, M.D.

PHILADELPHIA

During my term of service at the Maternity Hospital I have been impressed with the remarkably large number of normal pregnancies and labors in primiparous women of sixteen years and under. The Maternity Hospital, originally founded for the protection of unfortunate young girls and women, has cared for a large number of cases of pregnancy in adolescents. In order to study the course and complications of their reproductive processes the records of some twenty years have been analyzed. Few such series have been presented in the literature and it seems that this group might profitably be added. In addition, the histories of four primiparous women, past the age of forty years, which places them well up in the class of elderly primiparas, have been used in comparison. The other group reported range from twelve to sixteen years, inclusive.

TABLE I

Age	*Negro*	*White*	*Total*
12	2	1	3
13	4	2	6
14	10	7	17
15	19	38	57
16	30	44	74
	65	92	157

Social Status: These young girls have all been unmarried at the time of delivery, with the single exception of a fourteen-year-old white girl, who was married to the father of her baby on the day of admission. It is interesting to note that until the age of fifteen years all were listed as school girls or with no occupations; after that year a great variety of occupations was noted, the majority being factory workers. Only one of the group of elderly primiparas was a married woman.

* From The Maternity Hospital of Philadelphia.

Duration of Pregnancy: The duration of pregnancy in this group deviated only slightly from the normal. Two hundred and eighty-one days represented the average length of pregnancy for these 157 women, in the white girls 283 days, in the negroes 278 days. In one case, a thirteen-year-old negro, 302 days elapsed from the date of rape to date of delivery. In two girls who had never menstruated, one a white girl aged 13 years, 280 days elapsed from the date of rape to the date of delivery, and 292 days in a white girl aged fifteen years. The average duration of pregnancy in the four elderly primiparas was 278 days. It is thus seen that the duration of pregnancy is entirely uninfluenced by the age of the gravida.

Complications of Pregnancy: Abnormal conditions during pregnancy have been few. The majority of these girls have been in the hospital for periods varying from a week to several months before the expected date of delivery. The resultant care and constant observation may have eliminated some possible complicating factors; yet their marked freedom from complications is an added evidence of the ability, even in early years, to bear the strain of pregnancy. Eight cases of albuminuria developed. Four cases of eclampsia were recorded. There was one intrapartum attack in a girl who had been in the hospital for but one day, who was delivered with high forceps and recovered. Three cases of postpartum eclampsia occurred. Two recovered, one a negro, aged thirteen years, and one a white girl, aged sixteen years. The last recorded case of eclampsia died. This was a white girl, aged sixteen years, who was admitted for toxemia, had labor induced on the day following admission and was delivered of a baby weighing 4,050 grams, through a justominor pelvis. Within a few hours death occurred in convulsions. No antepartum hemorrhages of any variety were recorded. Two cases of polyhydramnios were recorded, both in sixteen-year-old girls. In one case the baby was born prematurely and died.

Dilatation of the cervix for periods of days and even several weeks before delivery is recorded in many histories. As a rule this finding is quite uncommon in primiparas. It is possible that attacks of false labor may have been responsible for this unusual preliminary dilatation.

Premature Births and Stillbirths: Only two stillbirths were recorded, both in negroes, aged fourteen and sixteen years. The clinical notes strongly suggest syphilis as the responsible factor. The routine Wassermann was not in practice at that time.

Seven premature births are recorded. Three were in fourteen-year-old negroes, two in fifteen-year-old white girls, and two in sixteen-year-old white girls. Six of the babies, including one of a woman with polyhydramnios, died. The remaining baby left the hospital in good condition and gaining in weight. The causes of the premature births are not clearly stated. Syphilis was considered as the cause in the two negroes, but no suggestive notes were found in the other histories.

Three babies born at term died during the first week. One from atelectasis, one from convulsions following a prolonged labor, probably a case of cerebral hemorrhage, and one as the result of high forceps delivery in an intrapartum eclamptic. These eleven deaths give a fetal mortality of seven per cent. One congenitally malformed baby was born, with harelip and cleft palate, to a white mother of sixteen years.

Weight of Babies: The average weight of the babies born to these young mothers was 3,136 grams; of the negroes, 3,044 grams; of the white girls, 3,196 grams. By age groups the averages were: 12, 2,721 grams; 13, 2,755; 14, 2,872 grams; 15, 3,216 grams; 16, 3,189 grams. There was a rather steady increase up to the age of 15 years, noticeable in both races. The smallest baby born at term, to a negro aged thirteen years, weighed 2,452 grams; the largest, in a fifteen-year-old negro, weighed 4,625 grams. Of the elderly primiparas, the weights of the babies ranged from 2,925 to 3,600 grams.

It will be seen that the average weights of the babies were quite on a par with the weights of infants at term of mothers in the third decade of life.

One case of twins was met in this series. The babies were females. They were born to a sixteen-year-old white mother, presented as breech and vertex, and weighed 1,220 and 1,800 grams. They gained and left the hospital in excellent condition.

Pelvimetry: A study of the pelvic measurements showed a certain degree of contraction of the pelves. This may be attributed to immaturity and lack of development, and possibly some deficiency in nutrition. Aside from the justo minor pelves, the largest number of pelvic deformities occurred in the negroes, and comprised six flat pelves, five rachitic flat pelves, and one generally contracted flat pelvis. This is a finding rather to be expected in the negroes, and in this class of cases somewhat increased over the general average due to the fact that in many cases malnutrition and errors in diet as well as childhood labor have had a part in producing the deformity. However, it is interest-

ing to note that cesarean section was not necessary in this series, and that pubiotomy was resorted to but once.

Including all grades and varieties of deformities, approximately 20 per cent of these young girls had some abnormality of the bony structures. Yet in the great majority of cases normal labors occurred—a fact which is of weight in allowing a test of labor in a so-called borderline case of pelvic contraction in an adolescent.

TABLE 2. PELVIMETRY

Age Race	Normal	Justo Minor	Generally Contracted	Flat	Rachitic Flat	Generally Contracted Flat
12						
White	.....	1	.....	.....	.....	.....
Negro	1	1	.....	.....	.....	.....
13						
White	2	.....	.....	.....	.....	.....
Negro	2	1	.....	1	.....	.....
14						
White	6	1	.....	.....	.....	.....
Negro	4	2	.....	2	2	.....
15						
White	33	3	1	1	.....	.....
Negro	13	2	1	1	2	.....
16						
White	39	3	.....	2	.....	.....
Negro	24	2	.....	2	1	1
	124	16	2	9	5	1

Labor: The course of labor in these young girls was quite normal. The average duration of the various stages of labor in the different groups by age showed no material difference. For those cases which ended spontaneously the average duration of the first stage was nine hours and thirty-five minutes, for the second stage the average duration was two hours, for the third or placental stage, eighteen minutes. This made an average total time of eleven hours and nine minutes, whereas in the elderly primiparas the average duration was ten hours and fifteen minutes, and in all of the latter the labor ended spontaneously.

Operations and Complications of Labor: Pubiotomy and high forceps were necessary to deliver a negress aged fifteen years, with a flat pelvis. The mother made a good recovery and was discharged thirty-five days later with a healthy baby.

Forceps operations were performed eight times. The high operation was used, in addition to the above mentioned case, to deliver in an intrapartum attack of eclampsia, and again in a face presentation, after efforts to convert into a vertex had failed. Forceps were used in the low or perineal stage to deliver two thirteen-year-old mothers, two fifteen-year-old mothers, and one sixteen-year-old mother.

Induction of labor was performed once for flat pelvis in a fourteen-year-old negro, and once in a sixteen-year-old white mother for toxemia.

Perineorrhaphy was performed either as a primary or secondary operation after thirty-seven labors.

In two cases prolapsed hands and arms were delivered spontaneously with the vertex.

The presentations of the vertex showed a surprisingly small number of posterior presentations. However, many of these cases were not examined during labor, or until late in labor, and the correctness of these data cannot be assumed. Four breech presentations and one face presentation were recorded.

Placental Stage: The third stage of labor in these girls was quite uneventful. The placenta was adherent once in a thirteen-year-old girl, but was delivered by the Credé method. In a fourteen-year-old negro manual extraction was resorted to three hours after delivery, when the Credé method failed.

Postpartum hemorrhage occurred in three cases; packing was needed but once.

Puerperium: Puerperal infections were noted in three cases. A fourteen-year-old white girl recovered after 57 days; a fourteen-year-old negro recovered after 38 days. A fifteen-year-old white girl was curetted for fever and foul lochia on the thirteenth day after delivery, and was discharged as cured on the twentieth day after delivery.

Mastitis occurred in two sixteen-year-old white mothers. In one of these the infection necessitated incision and drainage.

One case of saphenous phlebitis was recorded, in a sixteen-year-old negress, after a spontaneous delivery. She was discharged as cured on the thirtieth day after delivery.

Maternal Mortality: Two deaths were recorded in this series. One sixteen-year-old white girl admitted for toxemia died of postpartum eclampsia. One sixteen-year-old negro, delivered spontaneously, had a lacerated perineum. While being etherized on the following day for operation to repair, death occurred suddenly and was attributed to cardiac embolus. The maternal mortality was 1.2 per cent.

SUMMARY

From this study it would seem that adolescents are able to stand the strain of pregnancy, labor and lactation as well as their elder sisters. They seem to bear the brunt of the enormous

physical and mental changes of pregnancy well, and in many instances, while earning their livelihood and concealing their condition. The anabolistic tendencies of their developing bodies have enabled them to meet and carry the burdens thrown upon them. The pelves of these girls reflect to a certain degree their immaturity and perhaps, in some instances, their lack of proper nutrition and care in the formative stage. Their labors have fallen well within the normal limits of time. The powers of expulsion have apparently developed as well as in older women.

The average weight of the infants is somewhat below normal, although variations above that level have been in some instances remarkably high. Pregnancy has been of normal length and but little assistance has been necessary for its completion at term. The puerperiums have been noticeably uneventful. The youthful mammæ have functionated normally, and in the majority of cases the breast-fed infants did well while under observation.

In a similar manner the histories of the four elderly primiparas have refuted the oft repeated and mistaken notion that the reproductive act in the extremely young or old primipara is fraught with difficulty and danger. We have seen in this series of cases that the child-bearing act is normal in adolescents as well as toward the end of the child-bearing life.

262 South 21st Street.

THE PROPER DEPTH OF AN ETHER ANESTHESIA

F. R. WIDDOWSON, M.D.†

PHILADELPHIA

It is a privilege to consider and present a subject so important and basic in character that all else in the domain of anesthesia seems to bear a vital relation to it.

In the daily routine of a doctor's work, certain duties are performed again and again, and as a result of this repetition, acts are relegated to the subconscious field. The human mind could not stand the wear and tear of a complete mental action in the performance of all physical acts during life; hence it is a blessing that a subconscious condition exists. The proper use of this subconscious field is a very important matter. Things committed to this state should not remain there as archives, but should be in condition, at any moment, to be brought to the field of consciousness to be reviewed and revised. The tendency among hospital interns and doctors to relegate anesthesia and its problems to the subconscious condition, as an archive, is my chief reason for considering the proper depth of an ether anesthesia.

Any doctor can pour ether, but all too few can conduct an ether anesthesia with any degree of skill. An ether anesthesia is one which is produced mainly by ether, together with the use of any agent or other anesthetic which renders the anesthesia more effective, safe, and pleasant.

DEGREES OF SENSIBILITY

The depth of an anesthesia should be such as to enable the surgeon to perform a given operation without interference. When the anesthesia is more profound than necessary to accomplish this end a condition of poisoning results, which is manifest by an increase in postoperative nausea and vomiting with a consequent increase in morbidity, if not mortality. In the consideration of the proper depth we are compelled to take note of the degrees of sensibility in different portions of the body and vary the depths of anesthesia proportionately. Compare, for instance, an anesthesia for a vaginal with that for an abdominal operation. The former has to produce immobility of the limbs with the accompanying unconscious state; while the latter has to produce, in addition to this, relaxation of the abdominal muscles, and have under control the reaction of the viscera subject to operative manipulation. Needless to say, the latter requires considerable depth beyond the former. In this way one should consider the many different organs and parts of the body with a view to determining the relative degrees of sensibility, and having done this, adopt the degree of anesthesia suitable to the part upon which operation is being performed.

EXPERT ADMINISTRATION

The power of adaptation comes to one only through untiring efforts, close observation, abundance of experience and practice. A number of years is usually necessary to accomplish this end. This explains why comparatively few ever develop any degree of skill along anesthetic lines. Before they become to any degree proficient they forsake the field and go into other lines of endeavor, using anesthesia as a stepping stone. Picture, if you will, a doctor aspiring to be a surgeon, who grasps every opportunity to direct his efforts in some other line. How proficient would he become? No one can expect proficiency in any line of work who is not untiring in his efforts to grapple with the problems associated therewith. The principal distinguishing feature of a skilled anesthetist is the power

† Anesthetist to the Gynecological Department, Jefferson Hospital, Philadelphia, Pennsylvania.

to gage accurately each moment the depth of anesthesia.

ETHER SATURATION

In the administration of ether, after the patient has been prepared, use very little anesthetic until you have determined how sensitive the patient is to the ether vapor. Let the strength during the conscious period, be governed by the degree of response, increasing the strength of vapor as fast as you can, without producing too great a degree of discomfort. As soon as the unconscious stage is reached, indicated by the beginning of oscillation of the eyeball, the ether pressure in the pulmonary air can be increased, according to actual experiment, from 15 to 26 per cent. In a cumulative way the proper anesthetic tension in the arterial blood is attained, and in a short time the entire circulation and fixed tissues are brought to a uniform tension. This is the point of saturation to the extent of full surgical anesthesia.

Sufficient time must be allowed to accomplish this state. If the pulmonary tension, at any moment, be raised too high, the arterial blood becomes surcharged. This highly charged blood bathes the sensorium, with the result that the symptoms of profound anesthesia are produced so far as the eyes, respiration and other bodily reactions are concerned, but rigidity of muscles exist. If ether is withdrawn, in a very short time this excessive tension is replaced by a deficient depth and the patient is not sufficiently anesthetized. This sudden change from what appeared to be profound anesthesia to deficient anesthesia is produced by the diffusion of the ether in the surcharged arterial blood through the capillaries into the low tensioned venous blood and fixed tissues. The resulting dilution and uniform tension in all the fluids of the body is much less than previously existed in the arterial blood. This indicates that sufficient time must be allowed for anesthetization to permit a uniform tension to exist during the entire progress of anesthesia. When this uniform tension is maintained, a quiet, calm, uninterrupted anesthesia is the result.

Ten to twelve minutes is the average time necessary to produce surgical anesthesia. Some exceptional cases require one half-hour or more to be brought to full tension. When anesthetizing a sthenic patient, it does not seem so necessary to observe the foregoing facts; but when you are dealing with an asthenic patient, having a weak heart muscle, you may at any moment have a fatality by being too rapid in your administration. What is good for the asthenic case, is also good for the sthenic; and any patient, no matter how strong, should receive the benefit of the anesthetist's skill.

SIGNS OF PROPER DEPTH

No sign or combination of signs, which enables one to gage accurately the depth of anesthesia at any given moment, should be neglected. There are signs that are more constant and uniform in their action than others, hence more valuable. The particular sign, in my experience, which is the most constant and reliable, is the oscillation of the eyeball. The motion of the eyeball persists during the varying depths of anesthesia necessary for the different operative procedures, and this motion should never be entirely obliterated. It varies inversely in extent and activity to the depth of anesthesia. In any operation on a given portion of the body, a certain depth is necessary. A certain degree of motion of eyeball indicates a certain definite depth. It remains for the anesthetist to ascertain that particular depth suitable to the particular operation in hand, by the degree of motion of the eyeball. After having done this, in the case of each operation, the anesthetist is in position to say just when the patient is in condition for the operation to proceed. It is rather a difficult and time consuming effort to accomplish this, but once mastered, it is worth all it costs. This is not given as an exclusive sign, but as one of the most constant and uniform in its action under varying conditions to be used in conjunction with all other signs of proven practical value.

In conclusion let me call attention to the following summary statements:

1. Do not assume the responsibility of an anesthesia unless you realize it is one of the most responsible duties in the operating room.

2. If you cannot become interested enough to deal in a serious manner with all the problems of anesthesia, abandon the field.

3. Ether should not be given at such a rate as to cause a surcharging of the arterial blood, but sufficient time should be allowed for the diffusion of the anesthetic so that a uniform tension exists during the entire progress of the anesthesia.

4. The oscillation of the eyeball is the most accurate and constant sign we possess to determine the depth of anesthesia. It should not be used alone, but in conjunction with all other signs of proven practical value.

5. The proper depth of an ether anesthesia is that which has been produced by the least amount of anesthetic agent necessary to render the patient in condition properly to undergo a given operation.

6. It is not an easy task to conduct an anesthesia properly.

6201 Lansdowne Avenue.

A RETROGRADE ESOPHAGEAL BOUGIE

GABRIEL TUCKER, M.D.*

PHILADELPHIA, PA.

In most cases of cicatricial stenosis coming to the Bronchoscopic Clinic, peroral esophagoscopic bouginage has been the most satisfactory and safe method of cure.

In some cases however a series of eccentric strictures of long standing have presented a group of conditions that have rendered retrograde dilatation desirable. In a number of cases retrograde esophagoscopy,† using Chevalier Jackson's steel stem filiform bougies, has proved very satisfactory. All retrograde methods are, of course, practicable only in gastrostomized patients.

In cases presenting a series of three or more strictures with lumina of small diameter and located eccentric to each other, the most expeditious and safe method is to draw upward from the stomach by means of a swallowed string the retrograde bougie shown in the illustration. It is made of soft pure rubber of the finest quality, moulded on a braided silk thread which is continuous. When the bougie is drawn into a stricture, the diameter is somewhat diminished by the traction. When the traction ceases and the bougie is allowed to remain in the stricture, the resiliency of the rubber affords continuous dilatation by its expansion. The longer it is left in situ the more lasting the effect. Increasing sizes are used as the lumen of the stricture increases up to No. 30 French scale. When a permanent lumen of this size is obtained the patient can swallow any properly masticated food. Great care is required to avoid rupturing the esophagus by pulling through a bougie of too large size. The use of a larger size should not be commenced until the preceding size comes through easily.

It is found that the bougie with the full diameter engaged in the stricture is most easily removed by drawing it through the mouth, this is explained by the action of the reverse peristaltic wave, excited by the movement of the bougie in the esophagus

As with all other methods of treatment of esophageal stricture, occasional observation for a year or two is necessary to detect any tendency to recurrence.

Results obtained at each dilatation are directly in proportion to the duration of sojourn of the bougie in the stricture. The usual sojourn is a half-hour. The treatment is not painful and after a few treatments the children learn the painlessness of the method. They do not cry and often want to pull the bougie through themselves

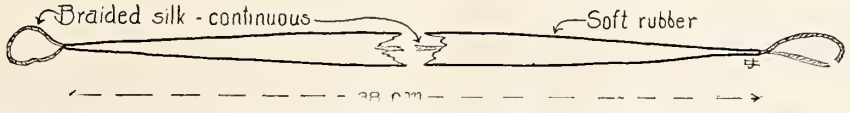
The method is, I think, safer than the string methods of Mixter, Abbey and Sippey.

Thanks are due Chas. P. Pilling and Son for the careful working out of the mechanical details.

2117 Chestnut St.

*Assistant Professor of Bronchoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

†Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, 1914, p. 537.



Retrograde Esophageal Bougie, to be drawn through the mouth by means of a swallowed string, in gastrostomized cases of esophageal stenosis. The instrument is made in 10 graduated sizes.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

A STUDY OF SOME OF THE MORE FREQUENT ABNORMAL SYMPTOMS IN CHEST AND ABDOMINAL DISEASE

DR. JOS. C. OHAIL

The voluntary nerves run directly from origin to termination, giving off, in their course, branches to the adjacent structures. However, there are no intercommunications between the branches. The sympathetic fibres do not run straight from origin to termination but are exceedingly intricate in their intercommunications with one another, forming a very complicated network, and near where they originate they form large masses called ganglia and axes.

Another point must be borne in mind, and this is that the section of the spinal cord which supplies terminals to a certain surface area of the body also supplies fibres to the sympathetic system at a point whence originate fibres that supply the internal parts beneath that supplied by the coöriginal somatic fibres. For example: that portion of the spinal cord which supplies

terminal branches over the gall-bladder area of the abdomen will also send fibres to the sympathetic cord ganglia whence arise fibres which supply the gall-bladder. This is true of other parts of the body, both thorax and abdomen.

Some illustrations may now be cited to portray more clearly what is meant by the foregoing description.

1. The thorax. It is a well-known phenomenon that there is a skin binding over the site of a tuberculous lesion. This is not limited to this area alone but quite frequently there is found an increased spasticity of the muscles of the neck on the side of the lesion.

2. Then too, there may be noted a pain in the chest, referred from pathology in the abdomen, and vice versa. In the first, to the chagrin of the internist, and in the second to the humiliation of the surgeon, for occasionally we find a pain referred to the chest which is due to an inflamed appendix. On the other hand, not infrequently do we find pain referred to the region of the appendix in case of a beginning pneumonia.

If there is pain, worse after meals, with hyperacidity, one naturally gets the impression that it has to do with the stomach or the duodenum, and clinically one is inclined to view it as an ulcer of one of these organs. The chief point of differentiation is whether the distress is entirely or almost entirely after meals and not at any other time. This will point to a gall-bladder pathology rather than to that of the stomach or duodenum.

A case operated on some years ago gave all the symptoms of ulcer of the stomach save that her distress was after meals and that alone. A removal of her gall-bladder has entirely cleared up her gastric symptoms.

The pain in gall-bladder cases may be at times referred to or below the left breast near the costal margin. About a month ago such a case came under observation with an onset of great suddenness. She suffered such intense agony that a hypodermic of a half grain of morphia was not sufficient to give entire relief. The pain was referred to the costal margin, or just above, in the anterior axillary line. She was removed to the hospital, where she was seen by a surgeon and because of the location of the pain the pathology was in doubt. However, it looked so much like either a gall-bladder or a duodenal case that the abdomen was opened, when quite a quantity of free bile was found in the abdominal cavity. After a stormy convalescence she made a complete recovery.

The appendix is a field whose fruitfulness for trouble is far from being fully appreciated. The laity even think appendicitis is a fad among physicians, yet far from the last word has been said on this subject.

a. *Appendicitis Simulating Gall-stone Colic:* Some years ago a nurse was seen suffering from typical symptoms of a gall-stone colic, both in the character of the pain and its location. At operation there was no pathology in the right upper abdomen. The appendix was found not only retrocecal but retrocolic, with the tip extending almost up to the level of the costal margin. Its removal cleared up the symptoms entirely.

b. *Simulating Gastric Ulcer:* The patient seen some years ago had been under the care of one of the most excellent physicians of the city for something over a year and had been on a very restricted diet because of a supposed gastric ulcer. She would have her distress whether she ate or whether she did not, whether she ate lightly or whether she ate to her full satisfaction. The case was diagnosed as chronic appendicitis. However, a severe acute attack occurred in this case and after a desperate convalescence she made full recovery and has had absolutely no gastric symptoms since.

Another case in which the chief complaint was gas after meals was also entirely relieved by a simple appendectomy. Gastric ulcer had been previously diagnosed in at least two army hospitals and one civil.

The third case complained of pain of three months' duration, located retrosternally, coming on after meals with the formation of a considerable amount of gas. Following an appendectomy three years ago there has been no return of the retrosternal pain or abdominal symptoms.

The fourth case was that of a young woman about twenty-five years of age, who was scarcely ever free from peptic ulcers of the mouth. Sometimes one, sometimes a half dozen were present nearly all the time. They were of large size and so annoying that she could scarcely eat at times. The diagnosis of a chronic appendicitis was made. The diseased appendix was removed and during a four year period of obseravtion there was no return of ulcers.

If that occurred, undoubtedly through trophic impulses brought about by a chronic appendix, why might not the same thing occur in the gastric mucosa, giving rise to ulcers of the stomach?

If the surface of the abdomen is carefully examined for changes in tension of the muscular structures, then many stomach cases will

cease to exist, for they will be found to be gall-bladder or more likely appendix cases.

Rigidity of the upper right abdomen means pathology there, regardless of the location by the patient of his distress. It may be gall-bladder, pancreatic, duodenal or gastric pathology. In the right lower abdomen there is practically but one thing. Appendicitis and rigidity to some extent, are rarely if ever found dissociated.

CONGENITAL TOTAL HEMIHYPERTROPHY

Drs. J. N. Stanton and Louis Tuff

Congenital total hemihypertrophy, characterized, as the name implies, by symmetrical enlargement or hypertrophy of the whole side of the body, is a most unusual and rare anomaly. Its rarity can be appreciated by the fact that in a complete survey of the literature on this subject, but forty-one cases of true hemihypertrophy could be collected. An example of this curious anomaly of development is reported herewith:

CASE REPORT

History: The patient, Miss A. P., a white girl aged 16, was admitted to the hospital June 12, 1921. She complained, on admission, of a small tumor in the left breast which she had noticed for a month previous. This was readily removed later and proved to be a small fibro-adenoma.

In the course of a routine physical examination it was noticed that the entire left side of her body was more developed than the right. This condition the patient stated had been present since birth and had caused her very little inconvenience. Since her right leg was shorter than her left, she was forced to limp slightly to compensate for it. When younger, on account of the increased size of the left side of her tongue, she had difficulty in talking and especially in pronouncing "th's." As she grew older, this became less and less noticeable until at present it was very slight. She had four sisters and four brothers, but all were of average size and nowhere in the family was there a history of a similar condition. When admitted, except for the lump in her breast she felt perfectly well and had no complaints. There was no history of menstrual irregularity.

Physical Examination: The patient was well nourished, weighed 118 pounds and was five feet, five inches tall. There was a distinct difference in size between the whole right and left sides of the body. Measurements were taken to verify this and the differences in size noted are given in the accompanying table. The left cheek was bigger than the right and the left half of the tongue distinctly larger than the right. The thyroid gland was slightly enlarged, probably a juvenile type. The breasts were well developed and the left breast contained a small, freely movable mass in its lower and inner quadrant. The pubic hair was feminine in type and the external genitals well developed, there being no evidence of sexual dystrophy, suggestive of pituitary disturbance. To compensate for the increased length of the lower left extremity the right shoulder was drooped and scoliosis present. Aside from these findings, the rest of the examination was negative.

Laboratory findings in this case were negative. X-rays were taken of the entire bony skeleton, and revealed the fact that the enlargement was present not only in the soft structure but also in the bones of the left half of the body. The pituitary fossa was found to be normal.

TABLE OF MEASUREMENTS

Part measure	*Right*	*Left*	*Difference*
Head—circumference	10½ in.	11½ in.	1 in.
Width of orbit	2¼ in.	2½ in.	¼ in.
Width across shoulders	8½ in.	9 in.	½ in.
Arm length	12½ in.	13 in.	½ in.
Forearm length	8¾ in.	9 in.	¼ in.
Arm girth	7¼ in.	8¼ in.	1 in.
Forearm girth	7⅞ in.	8½ in.	½ in.
Wrist girth	6 in.	6¼ in.	¼ in.
Middle finger—length	3⅞ in.	4¼ in.	⅜ in.
Chest—breadth	5½ in.	6½ in.	1 in.
Abdomen—circumference	12 in.	15 in.	3 in.
Abdomen—umbilicus to ant. sup. spine	5 in.	6 in.	1 in.
Pelvis—circumference	15 in.	18 in.	3 in.
Lower ext. ant. sup. spine to int.	32 in.	34 in.	2 in.
Thigh—girth	17 in.	19 in.	2 in.
Leg—girth	12⅞ in.	14 in.	1⅛ in.
Foot—girth	9¾ in.	10 in.	¼ in.
Leg—length	14¼ in.	15¼ in.	1 in.
Tip of big toe to heel	10¼ in.	10¾ in.	½ in.

REVIEW OF LITERATURE

Various names have been used to describe this condition: viz., unilateral macrosomia, hemimacrosomia and unilateral gigantism, but congenital total hemihypertrophy seems to be the most popular. The exact nature of the factors causing this curious developmental anomaly is as yet obscure. That it is congenital and not hereditary, most all authors agree. Various theories have been advanced as to its origin. Some suggest that the condition resembles acromegaly, but no evidence of pituitary disease has been found in any of the reported cases. P. L. Mummery believes it to be due to one-half of the body growing faster than the other half and that this unequal growth is progressive. This has not been the experience of other authors who found that the hypertrophy was usually stationary, any increase being very inappreciable. Thus Ahfield, Wagner and Moebius reported a case which they separately observed over a period of eleven years and found no difference in the measurements of both sides of the body. That it is truly a hypertrophy and not a hemiatrophy can be readily seen by observation, for the tissues on the unaffected side are well-developed and of normal size and structure. Probably the most logical

explanation of its origin is that it consists in an erroneous deviation from the normal course of development in the embryonic period, (Gesell) most likely in the cleavage stage.

Pathologically the condition consists of a unilateral hypertrophy of the soft structure vessels, bones and occasionally the paired organs. Autopsy on several cases has shown that such paired organs as the kidneys, brain or testicle are enlarged correspondingly on the affected side; also that the larger blood vessels, such as the carotid and subclavian, show enlargement on the affected side. In one case (Gordinier) which came to autopsy, examination of the pituitary body and sella showed them to be normal.

The diagnosis of this condition offers no difficulty. Observation is usually sufficient to distinguish it from any other condition which might in any way resemble it. From hemiatrophy it is readily differentiated by the fact that the unaffected side shows no signs of atrophy but is normally formed in every respect. Acromegaly should offer no difficulty either, since it is bilateral, confined chiefly to the hands, face and feet, and is not congenital. Ofttimes, too, changes in the sella turcica and pituitary can be found by x-ray, which does not occur in hemihypertrophy.

ORBITAL CELLULITIS IN SCARLET FEVER

REPORT OF TWO CASES

Dr. W. C. MEANOR

Orbital cellulitis, although frequently met with from other causes, is rather uncommon as a complication in scarlet fever. Two cases are reported, one, a young man of 21 years and the other a girl of 12 years. Both cases had rather severe attacks of scarlet fever, but the nose and throat symptoms were not unusual. The onset in each case was sudden, with severe pain in the corresponding frontal region. There was little or no rise in temperature and no increase in secretion from the eye. Swelling of the tissues of the orbit increased daily until the eyeball remained in a fixed position. There was marked chemosis of the ocolar conjunctiva, and after a few days the cornea was almost entirely obscured from view but the lids remained fairly movable. At no time was there a very marked exophthalmos. In the young man an ulcer developed at the lower sclerocorneal margin and extended over considerable area in the lower quadrant. The swelling of the tissues continued for a period of two weeks, with steady excruciating pain which had to be relieved by opiates. Each day careful examination was made for any sign of localization or pointing, but at no time did it appear, and both cases went on to recovery without suppuration. The two cases ran practically the same course, with the exception that there was no corneal involvement in the girl. She recovered with normal vision. The young man recovered with a vision of 20/30 minus 2 in an eye that had previous to the attack been 20/20 plus.

Iced compresses were used in the beginning but only seemed to increase the pain and the hot fomentations were immediately substituted. The hot fomentations are much more comfortable to the patient, and support the cornea by increasing the blood supply. When the cornea became involved, sufficient atropin was instilled to maintain dilatation of the pupil, and sterile oil instilled to protect the cornea from the air. Iron tonics were given internally. It is important that instruction be given the nurse as to the proper manner of applying the hot fomentations. These should be used at intervals and not kept on continuously. The carrying out of these treatments should never be entrusted to the patient but always to a competent nurse.

If the cornea should be destroyed and a general panophthalmitis develop, enucleation should not be done, but rather an eviceration of the globe, being careful to remove all remains of the choroid and retina. The enucleation can be completed at a later date after all inflammation has subsided. The great danger of orbital cellulitis and suppuration is extension to the membranes of the brain followed by meningitis.

The importance of the proper care of the nasal cavities in scarlet fever cannot be overestimated.

COMPLICATION OF DUODENAL ULCER

Dr. N. P. DAVIS

Duodenal ulcer usually selects adults between 30 and 50 years of age. Gastric ulcer just across the pylorus has a predilection for females under 30. The patients here reported perforated in the first portion of the viscus and on the anterior or anterolateral aspect; 92% of all ulcers are found in the first portion of the duodenum and 60 to 70% of these occupy the anterior wall.

The symptoms of duodenal ulcer are very plain and easily interpreted. They consist principally of pain from one to three hours after eating and pain relieved by eating or drink-

ing at night. This latter is often so constant that the patient places a cup of milk and a few crackers near his bed so that he can eat and get relief when his pain comes on. These patients, on close questioning, state that they feel well when the stomach is full. This means that the pylorus is closed and no food is passing over the ulcer.

It is a fact that some patients are seen with acute perforation who deny ever having had stomach distress. Three patients gave a typical history of pain relieved by eating, and two stated that they had never had the slightest gastric discomfort. Not one of these patients had vomiting and none gave a history of melena. This latter symptom could easily be overlooked, however, as small amounts of blood with stool could be detected only by laboratory means.

Perforation is said to occur in 25% of all duodenal ulcers. Four of my patients came after acute perforation, and one after a chronic leakage and formation of a localized abscess against the gall-bladder. Alcohol is thought to be a causative factor in the production of perforation. None of this group used alcohol to any extent.

This group of patients were all seized, while at work, with acute violent pain in the epigastrium. Pain was the main and almost the only symptom during the first two hours. When examined by the family physician each patient showed marked rigidity and much tenderness in the upper abdomen. After a few hours had passed a slight elevation of temperature and increase of pulse were recorded.

The prognosis in all patients of this type must and does depend largely on the promptness with which they come to operation. In the stomach and duodenum very few organisms are found normally, and this point gives the early operative procedure an excellent outlook.

Three of the patients were operated during the first six hours after perforation. In each case the perforation was sutured, reinforced with a tab of omentum, the peritoneum dried and closed routinely. Each incision closed primarily, and two of the patients are entirely well at present.

One of the three remained well and went about his work until November 3, 1922, when he was suddenly seized with acute, severe pain in his epigastrium. He did not vomit. He exhibited marked general rigidity and tenderness in the epigastrium and right hypochondrium. Pains were referred upward into his chest. A hypodermic was given and the patient advised to go to the hospital. His abdomen was somewhat rigid and quite tender over the gall-bladder. Temperature 101°; pulse 96; respiration 24; leukocyte count 15,500. The condition appeared like one of acute cholecystitis, and a waiting program was followed. Five days later he showed an indefinite mass in the region of his gall-bladder. Incision proved that he had developed a second ulcer below the scar of the former one and that a chronic perforation had taken place. The gall-bladder and hepatic flexure had become adherent to the duodenum, and when these were separated a small abscess was found. The perforation was in plain view on the anterior surface of the duodenum. Much induration surrounded the point of perforation. In the presence of pus a posterior gastro-enterostomy did not seem indicated. The opening was closed with one stitch of chromic catgut and buried with a purse-string catgut. This was reinforced with a tab of omentum. The patient has not vomited and now, fourteen days after operation, he looks quite well.

The fifth and last patient, 48 years of age, had never had stomach symptoms until 36 hours before admission, when he was suddenly seized with acute, violent pain in his epigastrium. He did not vomit and his pains were not referred. He showed definite tenderness and rigidity in the upper abdomen. He refused to go to the hospital until 36 hours later, when he decided that he was worse and must take the advice of his physician.

On admission he was sick and anxious. Temperature 102°; pulse 130; respirations 26. Marked general abdominal tenderness and rigidity were noted. The tenderness seemed slightly more marked above the level of the naval, and on the strength of this, a high right rectus incision was made. The general peritoneum was intensely inflamed and flooded with smoky serum, bile and glairy mucus. On the anterior surface of the duodenum a perforation that would admit a match-stem was seen. Marked edema and induration surrounded this opening. The opening was closed and buried with catgut and reinforced with a tab of omentum. At this point it seemed perfectly clear that the duodenum was obstructed sufficiently to function poorly or not at all, and gastro-enterostomy was the only alternative.

In the presence of such a general peritonitis, it was deemed unwise to enter the cellular tissue back of the colon and stomach. Therefore, a loop of the jejunum was anastomosed to the anterior surface of the stomach. The patient's recovery was extremely stormy. His abdomen remained rigid and no peristalsis was heard for several days. He was given liquids by bowel and under the skin only. Every few hours he

vomited bile. On the morning of the fourth day the vomiting stopped and his abdomen began to soften. His incision suppurated and opened widely. There was no leakage of duodenal fluid. From the fourth day onward he improved, and went home thirty-one days later. A very large ventral hernia developed and he came about a year later for repair.

At this operation the stomach, duodenum and gall-bladder were so completely covered by adherent omentum and colon that nothing could be told about their mechanical state. The patient was symptomless as far as his stomach was concerned. His hernia was repaired, primary union followed, and he went home in good condition.

OXYGEN WITH CARBON DIOXID IN RESPIRATORY DEPRESSION AND ANOXEMIC DISEASE

J. R. McCURDY

The administration of oxygen in operating room emergencies and in certain diseases which develop anoxemic states has been indifferently accepted by physicians for many years. Its real value has, however, been missed in the vast majority of cases, because of careless, unscientific methods and lack of proper apparatus.

To emphasize its usefulness, especially when combined with carbon dioxid, in certain respiratory conditions, and to suggest better methods of administering oxygen, is therefore, the object of this paper.

Perhaps the most frequent anesthesia accident, or error, in nearly every hospital—in this country, at least—is *overdosage of ether*. It is in this class of cases that 10% CO_2 and 90% O proves most useful. The familiar picture of a limpid, perspiring, ashen-hued patient with slow, shallow, small, jerky respirations; weak, rapid, thready pulse; blood pressures down to the question-mark level—such a picture may be changed in the brief space of a dozen breaths to one of full, regular respiration; pink-hued skin; full, slower, regular pulse; ascending blood pressures and some appearance of tonicity in the musculature. To contend that patients should never be forced into this state of ether toxicity is simply "begging the question" although quite true. It does occur very often, and in the hands of expert anesthetists not infrequently, hence must be reckoned as an anesthetic accident.

In the critical postoperative period, especially the first two or three hours, when we so often see a weak, shallow, insufficient respiration, due to reaction following the exaggerated respiratory effort during anesthesia, depression of deep stage etherization and surgical shock, the beneficent effect of "10-90" is most gratifying. Our use of the carbon-dioxid-oxygen combination in these cases differs from the excellent work of Henderson, Haggard and Coburn, in that oxygen instead of air is exhibited with the CO_2, and by open inhalation instead of closed or semi-open method, and no attempt is made to measure the volume of CO_2.

In all these conditions, it will be noted, we are confronted by the symptom of depressed respiration—insufficient ventilation with resultant suboxygenation and its concomitant evils. The indication is, of course, respiratory stimulation in order that more oxygen may be supplied to blood and tissues from greater minute-volume of air. Drug treatment by hypodermatic administration of alkaloids and other means is disappointing and of little real value in emergency work, because of its slow action and uncertain effect. In carbon dioxid, there is a prompt acting, unfailing and natural physiologic respiratory stimulant quite safe in 10% or lower mixture. The mechanism of respiration is quickly revived and ventilation increased. Now if at the same time, one exhibits to the lungs a volume and concentration of pure oxygen considerably greater than is contained in air, the distressing and harmful symptoms of low blood pressure, weak, rapid heart action and cyanosis are relieved, and impending death or the later serious injury to nervous system and vital organs may be averted.

Ample evidence exists to prove oxygen a most valuable therapeutic agent in all conditions associated with acute suboxygenation, notably pneumonia, severe hemorrhage, acute bronchitis, pulmonary edema, acute cardiac failure and carbon monoxid poisoning in addition to the emergency states above mentioned.

Pneumonia—lobar and bronchial—being of such frequent incidence, is the disease in which oxygen therapy is most often called for, and if *properly applied* it is of very great value. Failure to obtain good results has been due to *insufficient dosage,* that is, failure to exhibit to the lungs and blood stream a volume and concentration of oxygen in large excess of atmospheric oxygen. Like many other medicaments it must be given in amount and frequency of dosage, to yield visible and positive effects. In pneumonia the guides to dosage are, as pointed out by Barach, 1st, the degree of cyanosis, 2d, the pulse rate, 3d, the mental condition. Cyanosis should be reduced or entirely dissipated within two to five minutes inhalation, except in the advanced cases where heart failure

and venous stagnation have developed. If such relief of cyannosis is not obtained the dosage is too small. The inhalation should be intermitted as soon as the color is markedly improved, and the duration and frequency of intermission determined by the return of cyanosis. One case may require almost continuous treatment, while another will show sustained improvement by inhalations of two to five minutes out of each 20 or 30.

The pulse rate will be slowed several beats, and possible irregularities improved, during the inhalation, but will gradually return to previous state as does the cyanosis. But progressive improvement will be noted as treatment is continued over several hours.,

For the administration of pure oxygen in the various anoxemic diseases above mentioned—"oxygen feeding," so called—many devices have been contrived. Most of them—as the oxygen chamber, metabolism apparatus and the like—are more or less complicated, expensive and impractical for every day use. The common wash-bottle-tubing-funnel outfit is well nigh useless and is a costly method, owing to its wastefulness of high-priced oxygen. Meltzer estimated that this method added not more than 2% oxygen to the inspired air. Physiologists agree that the administration should be by closed or semi-closed method, a portion of the expired air and gases being rebreathed and the balance either blown off through an expiratory valve or conducted through a reservoir of soda-lime to remove CO_2 and returned to the inhaler for inspiration. The latter method reduced greatly the amount of fresh oxygen consumed.

Frederick B. Utley, M.D., Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

January 8th, 1923

Dr. Edward A. Weisser, Presiding

NEUROPARALYTIC KERATITIS; ENUCLEATION WITHOUT ANESTHESIA

Dr. Edward Stieren reported the case of A. B., male, aged 46, who presented himself December 29, 1922, with a letter from Dr. Harvey Cushing which stated that, as a result of an operation for the removal of an acoustic tumor, the seventh nerve was inevitably destroyed and the root of the trigeminus was severed, leaving the right side a combination of facial paralysis and total fifth nerve anesthesia.

Although the patient stated that he had had no trouble or discomfort with the right eye for a period of ten months following his brain operation, the right cornea was found to be at least one-third smaller than the left and was generally hazy, with yellow deposits in its stroma. There was a small hypopyon present.

The conjunctiva was moderately injected and the lower lid had the typical sagging of a seventh nerve paralysis, with moderate epiphora. The eye and the right side of the face were totally anesthetic.

Enucleation was advised and cheerfully accepted. It was performed without any anesthetic at the Columbia Hospital, January 3d, 1923.

Several interesting observations were made during the operation. First, there was absolutely no sensation to the patient, who followed the various steps of the operation with great interest. Secondly, the conjunctiva bled much more profusely than is usual, and rather firm adhesions were present in an area half way back to the equator, indicating that a low-grade inflammatory process of the anterior segment of the eye had been going on for some time. Thirdly, the patient, when asked to describe the sensation when the optic nerve was divided, declared that the only sensation he felt was hearing the snip of the enucleation scissors; there was absolutely no sensation of light, although the eye was capable of distinguishing a moving hand at one foot.

Postoperative hemorrhage was more profuse than is usual, due, no doubt, to vasomotor paralysis; it was readily checked with hot compresses.

If a glass eye cannot be worn satisfactorily on account of the sagging of the lower lid, an external tarsorrhaphy will be performed.

RETINITIS PIGMENTOSA

Dr. Edward Stieren exhibited the case of H. G. F., male, aged 37, who has been under observation since February 24, 1922. At the first visit, vision in the right eye was 6/20–, which was improved to 6/15– with lens plus 0.50 cyl. axis 180°; in the left eye, vision was 6/20–, which was improved to 6/15 with lens plus 0.50 cyl. axis 180°. Pupils were normal in size and reaction. Tension was normal in each eye.

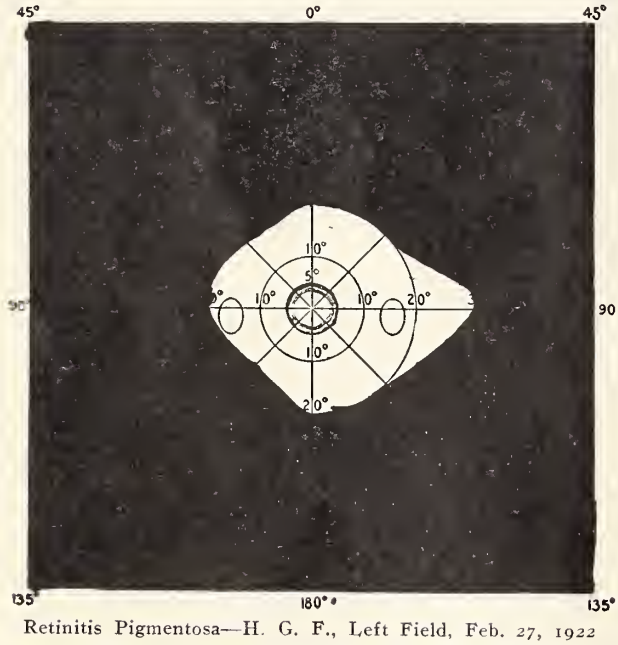
The accompanying fields were taken at that time and have not changed materially to date. Patient has been taking constantly strych. sulph. gr. 1/20 and ac. phosphoric dil. m xx, three times daily. Vision in the left eye, with correction, has improved to 6/12. There has been

no change in the vision of the right eye, but binocular vision is 6/8.

The fundus shows the typical narrowing of the retinal vessels. While the bone corpuscle



Retinitis Pigmentosa—H. G. F., Right Field, Feb. 27, 1922



Retinitis Pigmentosa—H. G. F., Left Field, Feb. 27, 1922

pigmentation is not so marked, occurring only occasionally, there is a general pigmentation of the retina, especially in the periphery.

George H. Shuman, M.D., Secretary.

NEW AND NONOFFICIAL REMEDIES

Bacillus Acidophilus Milk-Lederle.—Whole milk cultured with *Bacillus acidophilus*. It contains not less than fifty million of viable organisms *(B. acidophilus)* per Cc. During recent years reports have been published which indicate that the growth in the intestinal canal of the normally present *Bacillus acidophilus* may be increased so as to make it the predominating organism, by the administration of milk inoculated with *B. acidophilus*, by the administration of viable cultures of *B. acidophilus* in conjunction with lactose (sugar of milk) or by administration of lactose alone. The therapeutic value of cultures of *B. acidophilus* is still in the experimental stage. For a discussion of the actions and uses of lactic acid ferment preparations, see *New and Nonofficial Remedies*, 1922, p, 156. Bacillus acidophilus milk-Lederle must be kept on ice and should be used within one week of the expiration date which appears on each package. Lederle Antitoxin Laboratories, New York (*Jour A. M. A.*, Feb. 3, 1922, p. 323).

Theocin Sodium Acetate.—A brand of theophylline sodioacetate—N. N. R. (See *New and Nonofficial Remedies*, 1922, p. 357.) Winthrop Chemical Co, New York. *Jour. A. M. A.*, Feb. 10, 1923, p. 401.)

Diphtheria Toxin and Control for Schick Test—P., D. & Co.—Diphtheria Immunity Test (*New and Nonofficial Remedies*, 1922, p. 320), marketed in packages containing one vial of 0.1 Cc. of undiluted, standardized diphtheria toxin, one vial of 5 Cc. of sterile physiologic solution of sodium chloride, one vial of 5 Cc. of diluted control of Schick test and one sterile syringe point. Each package contains material sufficient for fifty doses. Parke, Davis & Co., Detroit, Mich. (*Jour. A. M. A.*, Feb. 17, 1932, p. 475).

Schick Test—Lilly.—A diphtheria immunity test (see *New and Nonofficial Remedies*, 1922, p. 320) marketed in packages containing one vial of diphtheria toxin sufficient for ten tests and a vial of sterile physiological solution of sodium chloride and in packages of ten vials containing toxin sufficient for one hundred tests accompanied by ten vials of sterile physiological solution of sodium chloride. As a control, the Schick test control, representing diphtheria toxin of the same lot treated to destroy the specific exotoxins is supplied. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, Feb. 25, 1922, p. 553).

PROPAGANDA FOR REFORM

Ginseng.—Ginseng has found no place in modern therapy. However, it has been reported that infusions of the extract of ginseng root are diuretic. But the most recent study has shown that the drug does not affect the nitrogen metabolism. Even the quack would find it difficult to discover a tenable potency on the basis of which the use of ginseng should be "boosted." (*Jour. A. M. A.*, Feb. 3, 1923, p. 328.)

Mercupressen.—From the advertising issued by the Barsa Chemical Co., Inc., 28 W. Twenty-third St., New York, for Mercupressen, this product is essentially the same as that which the Spirocide Corporation, 28 W. Twenty-third St., New York, marketed as "Spirocide." Spirocide was claimed to be composed of metallic mercury, copper sulphate, cypress cones, henna, nutgalls and dried pomegranates. The product was sold in the form of tablets. For use the tablets were ignited and the fumes inhaled by the patient. The Council on Pharmacy and Chemistry held that the claims for Spirocide were unproved and unwarranted and that the routine use of an inexact method for the administration of mercury is detrimental to sound therapy. The Council's rejection of Spirocide was subsequently fully sustained by the investigation of the inhalation treatment of syphilis carried out by Cole, Gericke and Sollmann. (*Jour. A. M. A.*, Feb. 3, 1923, p. 344.)

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EDITORIALS

THE ATLANTIC MEDICAL JOURNAL.

With this issue we present the first number of the ATLANTIC MEDICAL JOURNAL. It combines and continues the journals of the Medical Societies of Delaware and Pennsylvania, becoming the official organ of these two societies. It marks a new era in medical journalism in the East; the reason for its appearance was alluded to in the announcement of its publication in the January issue of the *Pennsylvania Medical Journal*.

We greet our brethren from Delaware and hope that through the medium of this journal a new and strong bond of professional friendship may be formed which shall be of mutual advantage. May we indulge in the hope that the combination of our journals may be the wedge which shall eventually bring about a consolidation of the publications of the other societies of the border states, a consummation which the late Dr. Alexander Craig believed would bring unusual prestige to the medical profession of this section of the United States.

With this advent passes the *Pennsylvania Medical Journal* of which we all have been proud. Its history is a most interesting one, as can be seen in that illuminating article in the May, 1921, issue, by our late editor, Dr. Stevens. A brief summary may be apropos.

The first suggestion for the publication of the transactions of our state society was made in 1883 by Dr. William Varian, president of the society, in his address. The suggestion was apparently premature and fell upon barren soil, and for eleven years nothing was done.

In 1897 the first issue of the journal appeared, under the management of Dr. Adolph Koenig, of Pittsburgh. It is of considerable interest to note that it was "the first of the state medical journals, which now number thirty-three publications, representing forty state societies." In 1904 Dr. C. L. Stevens became the publisher and editor and continued as such until 1920, when he relinquished all right to and interest in the JOURNAL. It then became the property of the Society, and has since been published under the supervision of the Publication Committee of the Board of Trustees.

When Dr. Koenig accepted the position of publisher he determined that the JOURNAL should be strictly ethical, and the Society was obligated to this principle. Dr. Koenig was aware that his stand would compel a rejection of considerable advertising material, with its large income, a matter of no little importance to a publisher. He stood by his determination, and his successors have followed in his footsteps, so that up to this time all preparations not having the sanction of the Council on Pharmacy and Chemistry of the American Medical Association have been barred from its advertising pages. To this same policy the ATLANTIC MEDICAL JOURNAL is committed, and it will endeavor to stand between the profession and the proprietary medicine evil.

We bespeak for the newcomer your careful consideration and hearty coöperation, two factors essential to every enterprise. We would have you feel that it is *your journal* and that in a large measure you will be responsible for its future. Kindly criticism and timely suggestions will be welcomed in an endeavor to make this publication worth while.

THE PUBLICATION COMMITTEE OF
The Medical Society of the State of Pennsylvania.

BISMUTH IN THE TREATMENT OF SYPHILIS

Sazerac and Levaditi in 1921[1] and 1922[2] reported the results of their experiments on bismuth compounds—bismuth ammonium citrate, lactate, subgallate, oxyiodogallate, and sodium and potassium tartro-bismuthate, in the treatment of rabbit syphilis. They observed that these salts of bismuth possessed a spirocheticidal action. The least toxic and most effective was sodium and potassium tartro-bismuthate which they proposed for treating human syphilis, and were the first to employ, using it in an oil suspension by intramuscular injections.

Subsequent to this study they reported equally favorable results in the treatment of rabbit syphilis with precipitated bismuth as with sodium and potassium tartro-bismuthate. The compound was injected in oil suspension. It, therefore, appears that the metal bismuth is the active spirocheticidal agent in bismuth compounds employed in the treatment of syphilis.

As a result of the elaborate researches of Sazerac and Levaditi the clinical use of bismuth as an antisyphilitic drug has been made possible. The favorable results reported by them in the treatment of human syphilis with sodium and potassium tartro-bismuthate were confirmed first by Fournier and Guenot,[3] who reported on its employment in the treatment of 200 syphilitic patients in different stages of the disease. Other reports, mostly French, have since appeared, until now a considerable number of syphilitic patients in all stages of the disease with diverse manifestations have been reported treated with the drug. In most of these reports, sodium and potassium tartro-bismuthate in an aqueous solution and in oil suspension were used.

The foregoing reports show that bismuth is therapeutically active when employed in the treatment of human syphilis.

Sodium and potassium tartro-bismuthate is administered solely by intramuscular injection. The drug is very toxic when administered intravenously in rabbits. It is administered either in an aqueous solution or an oil suspension. The former in doses of 0.1 gm. in 1 c.c. every other day, the latter in doses of 0.2 gm. in 2 c.c. of oil every fourth day. Most French writers favor the oil suspension of the drug since it is considerably less painful.

A course of treatment consists of a total administration of 2.5 gm. to 3 gm. of the drug given in the course of six to eight weeks. A rest period of about one month is instituted, then a repetition of this treatment until the Wassermann test is maintained negative.

Spirochetes disappear from the surface of open syphilitic lesions usually twenty-four hours after the administration of 0.2 gm. of the drug. Lesions of primary, secondary and tertiary syphilis involving the skin and mucous membranes involute after a total administration of the drug ranging in amounts from .4 gm. to 1.5 gm.

The four plus Wassermann reaction of most patients in early secondary syphilis, previously untreated, and in the late secondary stage becomes negative following the total administration of bismuth in amounts ranging from 1.5 to 3.0 gm. The four plus reaction of primary syphilis becomes negative after a lesser amount of the drug, and is somewhat proportional to the duration of the chancre. The four plus Wassermann reaction of tertiary syphilis requires varying amounts of bismuth treatment and cannot arbitrarily be stated.

The initial untoward reaction of bismuth is a foul breath and gingival blue line, which is indistinguishable from that seen in plumbism. These reactions may appear following a total administration of 1.5 gm. of bismuth. This however, is exceptional. They usually appear following the administration of about 2.5 gm. Depending upon the intensity of bismuth therapy, the foul breath and the gingival blue line forecast the appearance of stomatitis and are associated with it. The incidence of stomatitis is intimately associated with the intensity of bismuth treatment and the hygienic condition of the mouth of the patient treated.

Other untoward reactions are chills and fever occurring soon after an injection of bismuth, loss of weight, anorexia and malaise which may appear after prolonged treatment with bismuth. Less common reactions are polyurea, enteritis, and cutaneous reactions. Bismuth, as employed in the treatment of syphilis, apparently does not exert a nephrotropic action.

It is known that relatively enormous doses of bismuth can be taken by mouth without producing signs of intoxication. This is probably due to the fact that very little is absorbed by the digestive tract. Although at times following oral administration of large amounts of bismuth, signs of intoxication may occur, these signs also occur following absorption from wounds and when injected in the form of Beck's paste. Absorption is more rapid following the therapeutic use of bismuth by intramuscular injection. It is logical to believe that following this treatment any of the symptoms of bismuth poisoning with which we are familiar may appear. There is doubtless much to learn regarding the untoward reactions from the pro-

longed administration of bismuth by intramuscular injections. The bismuth therapy of syphilis is too recent to have given us full information in this regard. This therapy must still be regarded as in the experimental stage not only concerning the effectivity of the drug as an antisyphilitic agent but also regarding its toxicity. It is, therefore, a matter of considerable importance that one practicing bismuth therapy of syphilis should be cognizant of the symptoms of bismuth poisoning and to watch for the appearance of these symptoms. In the bismuth therapy of syphilis, as in the treatment of any infectious disease, the principle in therapeutics, namely, the importance of treating the patient as well as the disease, should not be neglected.

The advantage of having another active antisyphilitic drug in the treatment of human syphilis is obvious. Bismuth therapy is particularly advantageous in the treatment of syphilitic patients who are hypersensitive to arsphenamin so that the use of the latter drug is restricted, or contraindicated.

Another possible advantage of bismuth in the treatment of syphilis which is of considerable importance, although based upon theoretical considerations, concerns the occurrence of neurorecidive following the use of arsphenamin. The baneful action of irregular or lapsing treatment with arsphenamin is well known. Such treatment greatly increases the incidence of early neurosyphilis. Ehrlich's explanation of this phenomenon, is perhaps the one generally accepted. He explained the occurrence of neurorecidive upon an immunologic basis. He pointed out that, "In these patients the greater number of spirochetes are destroyed by the powerful spirocheticidal action of salvarsan. So rapidly is this accomplished that the usual tissue immunity which develops as a result of contact between parasite and host is lacking. As a result, a small focus of spirochetes in the tissue of the central nervous system which may escape the action of salvarsan, develops in the susceptible host with great rapidity and severity? In other words, a few injections of arsphenamin, the cessation of all other treatment, inhibits the consummation of immunological responses of the host to the parasite and doubtless produces a condition analogous to that existing in the primary incubation period in which there are spirochetes and no immunologic reaction.

Bismuth, on the other hand, by reason of a spirocheticidal action less energetic than arsphenamin and perhaps by virtue of intramuscular administration, does not, in all probability, inhibit immunologic reaction of the host to such an extent as it is thought arsphenamin does. One would, therefore, expect a lessened incidence of early neurosyphilis following irregular and lapsing treatment with bismuth.

It is a significant fact that the known spirocheticidal drugs are heavy metals or their salts—mercury, vanadium, antimony and bismuth. Arsenic is no exception to this, since the metal arsenic, *per se,* is not spirocheticidal. Moreover, arsenic, antimony, vanadium and bismuth are in the same group of periodic arrangement of the elements. A priori, it would be interesting to know if other closely allied heavy metals, for example thorium and other allied metals or their salts such as cerium, tin, germanium and tungsten, possess spirocheticidal activity.

J. V. K.

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THE ETERNAL QUEST

It was not a mere coincidence that Hippocrates was a great naturalist and Galen a great engineer; that Avicenna was a mathematician, philosopher and poet; that the greatest anatomist of the middle ages was also the greatest painter as well as a sculptor and musician; or that Queen Elizabeth's physician was the father of modern electricity.

All were insatiable seekers after truth. It is this search for the absolute truth that gives life its zest. It is this search that attracts the greatest, the keenest intellects. It is the vital occupation of active minds. Add to this mental activity a feeling of sympathy with human suffering and an impulse to relieve it, and you have the physician, the practical sociologist. After spending several evenings with Macleod's fascinating book, "Physiology and Biochemistry in Modern Medicine," one is thrilled with the power of scientific research.

The geologist, the physiologist, the chemist, the philosopher, the painter, the musician, and the clinician all alike are dominated by an inspired imagination. All are striving for truth. All are philanthropists. By getting in touch with such as these, whenever possible, we broaden our own lives, increase our efficiency, and enhance our contentment by giving life a deeper meaning.

L. L.

HOW TO PUNCTUATE A MEDICAL PAPER!

A Cartoon in Words

Dr. Jiggs was writing a paper to be read at the next meeting of the Calivania State Medical Society. It was hard work and Dr. Jiggs wrinkled his brow and tore his hair in vain.

Now, be it known to all concerned that Dr. Jiggs was an eminent man in his profession. He had made a name for himself by his remarkable work in the new science of endicro-terminology. But Dr. Jiggs was no literateur. He was a doer, not a mere coiner of pretty phrases. However, he had received his training in the Resourco Medical School, where the teaching aimed to make the graduates men of resource—self-dependent and capable of meeting any emergency without turning a hair. In other words, it aimed to make them red-headed, metaphorically speaking!

As before said, Dr. Jiggs never let a little thing like a stone wall or a comma stop him. He hiked right over without waiting to see what damage he might have caused in his flight, physical or oratorical. But this was a serious occasion. He was writing a paper by invitation; and everyone knows that is an important procedure. Thereon hung his future reputation; and try as he would he could not fit the right punctuation to the right phrase.

Page after page he wrote, only to fling it in disgust into the wastebasket, until this capacious receptacle was filled to overflowing with the outpourings of his genius. Time was pressing. What *was* he to do?

"Alas!" he cried in despair. "Unless Fate comes to my rescue all is lost!"

But Dr. Jiggs was no quitter, and he gathered his forces together for one last desperate effort. "Tap, tap, tap" went his faithful typewriter, as he hunted and punched key after key. So intense was his effort that he forgot the flight of time, and it was well after midnight when he picked up his completed manuscript with a dissatisfied frown. It was not what he had wanted. True, the substance of his message was there, but something was lacking—something so vital that when the paper would appear in cold type, robbed of Dr. Jiggs' vitalizing presence, the effect would be a flat failure. The punctuation was abominable.

"————————!" exploded Dr. Jiggs. But it was too late to mend matters. The meeting was to take place the next day, and Dr. Jiggs had barely time to catch his train to the convention city. So he stuffed the manuscript in his pocket, trusting to the Fate that had so often saved him from disgrace to come to his rescue again.

Strangely enough, he who trusts in Fate seldom trusts in vain.

Several months later, the editor of the Calivania Medical Journal shook his head dubiously. He had done his best to edit the eminent Dr. Jiggs' paper, but the result was far from satisfactory. It was a great disappointment. The address had been so glowing, so vital; and the audience had been swept along on a wave of enthusiasm by the Doctor's magnetic personality. But in cold type—frankly the result was awful!

With a grimace he inclosed the proof to Dr. Jiggs.

* * * * * *

But, as afore said, Fate often comes to the rescue of the foolish and of the great. That particular month the Calivania Medical Journal was late in appearing, and the printer's devil was madly running hither and yon, fetching and carrying, while the important work of making up the page proof was in progress.

"Hey, you, Jake! Get a move on! Don't you know we're late now?"

And Jake, instigated by Fate, startled, dropped the galleys containing Dr. Jiggs' article. Fearful of punishment, Jake scooped up the resulting "pie" set it in apparent order and carried the galleys to the waiting stone.

* * * * * *

When the issue of the Calivania Journal containing his article, reached Dr. Jiggs he did not open it for several days. He dreaded to view his direful failure. He *must,* he just *must* get a secretary that could punctuate for him.

One day he was surprised to see in the mail a letter congratulating him on his wonderful article which had recently appeared in the Calivania Journal. The next day several more such letters arrived. Then Dr. Jiggs opened his copy. He turned listlessly to the article; glanced at it; looked again, then again, with unbelieving joy radiating from his countenance. Then, gathering the magazine into his arms Dr. Jiggs danced the dance of a howling dervish.

His wife looking in at the door, said, "For the land's sake! Are you clear crazy?"

Said Dr. Jiggs, "My reputation is saved, my sagacity vindicated! Fate has come to my rescue and pointed the way to perfect punctuation!"

M. S. B.

DEFECTIVE SPEECH

Much has been written relative to eyestrain and faulty hearing as causal factors in the back-

wardness of school children, and comparatively little attention has been given to the similar influence of defective speech. There is no physical act so closely related to the mind as that of articulate speech. It has been called by one the "tool" and by another the "mirror" of the mind, and the muscles involved have been called the mental muscles. For the normal development of speech, therefore, there must exist contemporaneously a normally developing mind. The first indication oftentimes of deranged mental process is a tardy or faulty development of speech. On the other hand, we are beginning to recognize the fact that as speech is largely the product of the mind, so the mind depends for normal activity and development upon perfect freedom of speech. As the workman cannot do the best work with poor tools, so the mind cannot functionate properly with a defective means of expression. Not only is it handicapped by the mere presence of friction in the machinery of speech, but the consciousness of difficulty, even though it be slight, will lead to a confusion of thoughts that is entirely incompatible with normal mental development.

It is in school that this latter factor often assumes enormous proportions. A child will bear almost anything better than the ridicule of its mates, and the dread of being made fun of on account of a defect of speech is an insurmountable obstacle to progress. Moreover, children with defective speech not only shrink within themselves, but suffer great mental anguish because they appear to themselves to be different from others and because they are unable to express their thoughts freely.

Not only are those having marked defects of speech the subject of neglect on the part of school boards and medical directors, but it may be said that all school children should have more attention given to their speech and voices. The moral and educational advantages of speech and vocal culture are very great, not to mention its esthetic value; and, as a preventive and remedial agent in all throat affections it seems to be almost entirely overlooked.

It is a fact that almost all school children have some defect of speech. Some are only a little worse than others. A higher standard of excellence should be required, first in the teacher who furnishes the example, and second in the pupils who are to be future teachers. The Board of Education of Philadelphia lately has authorized the training of twenty teachers, who will go into all the schools and have special classes for the children. Particular attention will be paid to lisping and stammering. F. C. H.

IS INFLUENZA CONQUERED?

Epidemic influenza has been recognized for centuries, history recording frequent outbreaks of more or less severity. The pandemic of 1918 was of unparalleled severity, with an appalling death rate from complicating pneumonia. With the horrors of that winter still fresh in mind any appearance of influenza is a cause for the greatest apprehension. The etiological factor has remained a mystery, despite extensive research, and this has added to the dread of the disease.

Recent publication by Olitsky and Gates of their work in the Rockefeller Institute for Medical Research is of real interest, in that they have apparently discovered an organism which, by reason of its cultural and experimental characteristics, gives ground for the hope that influenza will soon be conquered. Olitsky and Gates are creditably cautious in their claims, only presenting the results of their experiments. Although it is still too early to herald their discoveries as an absolute solution of the problem of influenza, yet so important are their experiments that a knowledge of the results is of the keenest interest to all physicians.

Using rabbits, Olitsky and Gates injected intratracheally nasopharyngeal washings from patients suffering with influenza. As a result, one or two days after the injection the rabbits showed signs of malaise, fever, conjunctivitis and a leukopenia. These signs lasted 2 to 4 days. The most important finding was that the lungs, taken at the height of the attack, showed the following: a marked exudation of fluid into the interalveolar walls, practically an edema, with very few cells; rupture of the interalveolar walls, causing emphysema; hemorrhages into the substance of the lung; and the bronchi and bronchioles frequently filled with serous fluids and showing necrosis and exfoliation of epithelium. Thus, in brief, the lung substance was severely injured in patches, but showed none of the fibrinous and cellular consolidation which characterizes the ordinary pneumonias. Bacteriological examination of these lungs failed to reveal any ordinary bacteria as constantly present. However, intratracheal injection of a saline suspension of such lung tissue caused the prompt development of the typical syndrome and this could be induced successively in series of rabbits. This proved to the investigators that they were dealing with a specific, living virus. Experiment showed it to be filtrable and capable of being cultivated under certain anaërobic conditions. In time, the investigators were able to identify these organisms as small, globoid bodies, somewhat oval, gram negative, staining rather poorly,

These bodies at first grew feebly, but as they were carried through successive generations they became better adapted to artificial cultivation and multiplied luxuriantly. Suspensions of these cultures were then used in animal experiments, in parallel with those being made with nasopharyngeal washings from influenza patients, and suspensions of lung tissue from infected rabbits. These experiments showed that the organisms produced identically the same clinical and pathological picture as the other materials. Moreover, these organisms were obtained free from the protein of the culture media, by use of collodion sacs, and they still showed the same typical effects. Olitsky and Gates have named this organism the *Bacterium pneumosintes*—a bacterium that injures the lungs.

Further studies were now carried out, using the protein-free suspension of the Bacterium pneumosintes. It was found that the repeated intravenous injection of live or killed cultures caused an immunity against Bacterium pneumosintes which could be demonstrated by agglutination, precipitation, complement fixation and phagocytic tests. It was then found that rabbits which had recovered from an infection produced by intratracheal injection of nasopharyngeal washings, or of bacterium pneumosintes, were immune against subsequent infection and their serum gave the immune reactions. This immunity began during convalescence (10 days) and persisted about five months. Finally it was found that the serum of human beings who had had influenza within five months gave the same immunological reactions with Bacterium pneumosintes, while human beings who gave no history of influenza did not exhibit any of these immune reactions; also, patients who had had influenza two or three years previously did not possess any evidence of specific immunity, showing that this immunity is only temporary. A study was then made of the possibility of immunizing human beings, using killed cultures of Bacterium pneumosintes. Volunteers were given three subcutaneous injections in a similar manner to that used with antityphoid vaccine. On the tenth or eleventh day after the final injection the blood serum of nine men examined contained specific agglutinins for Bacterium pneumosintes, thus indicating the formation of protective antibodies as a result of the injection of the vaccine. This latter test is of course not definite proof of protection. Only the injection of large numbers of individuals during an epidemic and carefully following them will indicate whether or not this vaccination will protect against influenza.

Thus, to sum up, Olitsky and Gates claim to have isolated and cultivated an organism from patients suffering with influenza which is capable of reproducing a similar condition in rabbits. During the height of the attack in rabbits there is a peculiar damage to the lung which makes it susceptible to secondary invasion with such organisms as streptococci, etc. This organism causes the development of specific antibodies in the serum of rabbits, and these same antibodies can be demonstrated in the serum of patients convalescent from influenza. These antibodies can be developed in rabbits by the subcutaneous injection of suspensions of killed Bacterium pneumosintes, and rabbits so injected are immune to subsequent infection with this organism, this protection lasting about five months. Finally, injection of human beings brings about the same evidence of immune bodies in the blood serum, but only time can tell if this will protect human beings against influneza.

These experiments have involved an enormous amount of careful work, and they are beautiful in the thorough, logical manner in which they have been carried out. Confirmation, both from other laboratories and from practical, clinical test must come before the final result can be accepted. Meantime, physicians cannot but be deeply interested and hopeful. If these experiments should finally give all that they seem to offer, then one more triumph is added to the achievements of the medical sciences with the conquering of influenza. R. R. S.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE YOUNG DOCTOR; SELECTION OF A LOCATION AND TYPE OF PRACTICE

The far-sighted young man, even in advance of his graduation, might profitably give some thought to the location in which he will enter upon the practice of medicine. A resident service in a hospital must, of necessity, intervene between the completion of the medical course and actual entrance upon the practice of medicine on his own account. In some circumstances, there are definite advantages to be gained by entering a hospital in the community which the young medical man expects to make the field of his future endeavor. The opportunity to make both lay and professional friends, the possibility of later securing a junior appointment to the hospital, the assurance of a place in which a friendly reception will be accorded him and his patients, an intimate familiarity with the dis-

eases of the region, a knowledge of the conditions governing the practice of medicine in that community, and perhaps, an opportunity to become associated with an established practitioner, are some of the advantages which result from such a selection, and may be of considerable value in aiding him in the first difficult years of his practice.

In an attempt intelligently to decide upon a location and the kind of medical work in which to engage, the young doctor inevitably must essay an appraisement of his own personal peculiarities, talents and qualities—an obviously difficult undertaking, since he has as yet had but little opportunity for self-expression, and an accurate inventory of personal qualities by the individual himself is obviously difficult. The counsel of one or two more experienced and, therefore, wiser medical friends may be helpful. Every man owes it to himself to utilize his talents to the best advantage, not only that he may further his own advancement, but also in order that he may be of the greatest service to his fellow man. In other words, he should market his wares to the best advantage. The coin which he seeks in payment will vary. Some will consider a financial return the great *desideratum;* while others will be amply repaid if they achieve a modest financial return, at least some scientific success, and the appreciation and esteem of those who are worth while in the community in which they serve.

There is no lack of opportunity for the young physician of to-day who is well-trained and who has ability, industry and ambition. It is a question rather of *the* opportunity than of *an* opportunity—the avoidance of endeavoring to fit a round peg in a square hole, or, if you prefer, of fitting himself into that niche which he is best qualified to fill and adorn. Communities, laboratories, industrial plants, medical schools, custodial institutions, various public services, established practitioners, all beckon to him and endeavor to attract him into their service. With these opportunities before him, the young medical man should be especially careful not to fall into the error of accepting a position which may gain him a temporary advantage at the sacrifice of his future.

Considerable importance must be attached to personal qualities and special talents. Good health and a robust constitution are requisites to success in the general practice of medicine and surgery. Some of the medical specialties make fewer physical demands. An engaging personality may be a great asset, or the lack of it a great handicap in one type of practice, but of much less consequence in another.

A young medical man presumably takes up a special line in medicine because of the possession of unusual talents which interest him in that particular study, and fit him for it especially well. Lacking in a requisite special aptitude, he cannot hope to achieve in a special field more than mediocre success. It may be that during the period of his resident service the possession of a special talent will have become evident. If so, it should be cultivated and opportunity sought for its exercise, although it may be years before circumstances will make possible the restriction of his activities to that thing which he has found he can do best. Indeed, it is desirable that he should gain a general experience before restricting himself to a narrow field, in order that he may have a proper sense of proportion, and a knowledge of the proper relation of special activities to the whole subject of medicine. But during years of general practice he may study and perfect himself in a special branch with the object ultimately of restricting his practice to it.

By reason of previous experience or interest, some will fit best into industrial medicine; others with executive ability may be attracted to institutional work or to Public Health work, the Army or the Navy. A few—and they are far too few—have the pedagogic instinct, and will enter upon teaching careers and research work in educational institutions.

A decision as to what line to follow is often difficult, but will be determined by inclination, opportunity, necessity, or special talent; and, having more or less definitely decided that character of work for which he seems best fitted, the community in which he shall undertake his labors becomes the next important consideration. Shall it be urban, suburban, or rural? The answer is to be found, in part, in the decision with regard to the foregoing, since the community selected should give proper opportunity for the exercise of his talents to the best advantage.

A location is often urged upon young physicians, the chief advantage of which is stated to be the fact that there is no other physician within a reasonable number of miles, and that if he locates there he will be certain quickly to gain a practice. In other words, without competition he is sure to succeed. The offer of such an opportunity is not very flattering to the young man or his training, but it may be there are those who will succeed in gaining a livelihood under no other circumstances. It may here be said that medicine is indebted to country doctors for some of its greatest contributions.

To-day the press of the general economic situation upon the young physician tends to drive him from the large cities to which he is

predisposed by reason of his associations during his college and hospital days. The cost of equipment, high rents, and living expenses, often necessitate an outlay of two or three thousand dollars during the first year, and as his income is likely to fall far short of this, he must, in some way, be financed during this period. It requires much more capital than formerly to weather that period between the beginning of practice and arrival at a self-supporting basis. "Waiting for a practice" is rather expensive these days.

A suburban location presents fewer difficulties, often offers a greater certainty of early earning a fair income, and provides access to medical centers. Smaller cities often, too, offer splendid opportunities, not only in material return and scientific opportunity, but are places in which life is agreeable and personal contacts pleasant.

The young physician will be most likely to fit into the life of a community with which he finds himself in sympathy as regards race, religion, culture and ideals. If he has some familiarity with the chief industries of the section, it will also be an advantage. The selection of a location and the type of practice are both practical matters into the determination of which common sense is a *sine qua non*. My advice to the many young medical men who have consulted me has been that they should endeavor to select a community in which conditions of life are such as to insure a reasonable degree of contentment and happiness if possible among a people whose ideals and religion are similar to their own; to ascertain what particular talent, if any, they may have, and to develop such talent as necessity and opportunity may permit. Competition need not be feared, but on the contrary, acts as a stimulus to develop the best that lies within a man. Time is of the essence of success; talent, patience, industry and opportunity are indispensable adjuncts.

Ross V. Patterson, M.D.

Philadelphia, Pa.

COMMUNICATION

TO THE MEDICAL PROFESSION ON DIPHTHERIA WEEK

The Committee on Public Relations of the Medical Society of the State of Pennsylvania, coöperating with the State Department of Health, has designated a week in the month of April as the appropriate time to carry the message to every man, woman and child of understanding age concerning diphtheria.

Dr. Edward Martin, the chairman of the Committee, makes the following suggestions:

Bearing on Diphtheria Week the State Society intends that the educational campaign shall be put over more comprehensively, effectively and intensively than has been any previous campaign bearing on public health. The State Department is working with full sympathy and their force is entirely available.

The purpose is that every citizen in the state shall have carried to him and his family such knowledge on diphtheria as will enable them best to protect themselves against it, or if they have it of getting well without complications.

Dr. Finegan has promised full coöperation in the schools. Every school should have a diptheria lesson given by the teachers, given in his or her own class, given as they give a lesson in mathematics, with the children examined afterwards to see if they know it, the examination either written or oral, and the children marked on it. This doesn't happen unless someone drives it. The proposition is too big for one man to drive alone, but it is entirely feasible for each district chairman to secure people who will drive it in the various localities, they in turn grouping with them intelligent, broad-minded citizens who will see that this thing goes through properly.

Every church should have a sermon on diphtheria. The Bible is full of suitable texts and literature will be forwarded to any address. The newspapers should devote space to diphtheria, pushing the lesson home. Employers should put the brief facts, so far as prevention is concerned, in the pay envelopes. And, most important perhaps, the labor organizations, as well as other organizations, should be talked to and addressed on diphtheria by the members of our profession. Of course the radio is not to be despised, and of course you will have the complete and most efficient coöperation of the Catholic Church at once.

The medical profession has frequently been accused of not being sufficiently interested in public health matters, and this is an opportunity to belie the assertion. The Committee and the Department of Health appeal to every doctor in Pennsylvania, whether or not he be an officer or committeeman of his society, to assist in bringing this message to the people.

A sore throat may be one of the initial symptoms of diphtheria and should be treated as such. Toxin-antitoxin will prevent diphtheria, and immunization should be explained to the lay citizen. Our greatest offenders in prophylaxis are the foreign-born who do not understand. Carry the message especially to them. The Schick test should be as familiar to every practitioner of medicine as is vaccination for smallpox.

If your county has not held its county medical society and public meetings, be sure that such will be held. May this initial effort on the part of the profession prove a splendid success.

F. L. V. S.,
For the Committee on Public Relations.

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

MEDICAL DEFENSE

Is there a member of our Society clever enough to avoid all the circumstances that may lead to institution of an alleged malpractice suit as the result of his best efforts? There are apparently about two thousand five hundred of our members indifferent to the menace of threatened suits. If history repeats itself, however, more than two thousand of these apparently indifferent members will take advantage of the time intervening between the date of this writing, March 22d, and March 31st, to pay their 1923 county medical society dues, and thus assure themselves for all time of adequate defense against such suits. After March 31st, the good and faithful county society secretary will take up his unappreciated task of restoring to good standing those members who have by their own carelessness deprived themselves of medical defense and other material benefits of membership in the Medical Society of the State of Pennsylvania.

On March 22, 1923, 75 per cent or more of the membership of the following component county medical societies have paid their dues for the current year and the same has been remitted to this office.

Montour,	100%	Schuylkill,	90%	Washington,	83%
Wyoming,	100%	Clinton,	88%	Cambria,	80%
Adams,	95%	Mifflin,	88%	Bucks,	79%
Carbon,	93%	Blair,	87%	Delaware,	78%
Lebanon,	92%	Clarion,	87%	Franklin,	76%
Elk,	91%	Clearfield,	86%	Union,	76%
Greene,	91%	Dauphin,	85%	Erie,	75%
Lycoming,	90%	Mercer,	84%	Sullivan,	75%
Montgomery,	90%	Huntingdon,	83%	Warren,	75%

ANTI-VACCINATIONISTS.

On March 20, 1923, there appeared before the Committee on Public Health and Sanitation of the House of Representatives in Harrisburg in support of House Bill No. 62 a group of conscientious objectors to vaccination against smallpox, consisting of three laymen and two graduates in homeopathy of about the year 1900.

Their first speaker was fortified only by a volume of the Ninth Edition of the Encyclopedia Brittannica, from which he read the opinions of one or two of England's many anti-vaccinationists. The next proponent of the bill, a physician, read to the committee letters from several mothers who attributed keloid or osteomyelitis or diabetes in their respective children to the "accursed virus." Another proponent, recognized as "appearing frequently on such hearings," glibly related some smallpox statistics from Germany and the Philippines. The other one of the physicians above mentioned stated that vaccination had doubtful value, but that modern methods of sanitation deserved most of the credit for the decreasing morbidity from smallpox. Listening to such twaddle occupied sixty minutes of the committee's time, and the proper refutation of such misinformation required the presence of several busy medical men from Washington, D. C., Philadelphia, Huntingdon and other points in Pennsylvania.

The case of the opponents to the bill was well prepared by the Chairman of the Pennsylvania Medical Legislative Conference, and the facts regarding vaccination against smallpox were most convincingly presented by Dr. McCoy, of the United States Public Health Service; Dr. Andrew A. Cairns, of the Department of Contagious Diseases of the City of Philadelphia; and Dr. Jay F. Schamberg, of the latter city.

That the truth will prevail and that the bill will be unfavorably reported upon we firmly believe. Nevertheless, by such silly stuff such bills as No. 62 are inspired biannually, and their exclusion from our statute books in the health interests of our people justifies the existence of the Medical Legislative Conference and your annual contribution to the support of the conference. Printing, postage and railroad travel require money.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to March 17th:

Adams: *New Member*—Ivy F. MacNair, Littlestown.

Allegheny: *New Members*—James E. Rush, American Society for Control of Cancer, 370 Seventh Ave., New York, N. Y.; J. Sanford Moyer, Mercy Hospital; James D. Howard, 679 Washington Road; Adolphus Koenig, Jr., Westinghouse Bldg.; Donald R. Kunkelman, 406 Washington Road, Pittsburgh. *Deaths*—Stewart N. Pool, of Pittsburgh (Univ. of Penna., '91), Feb. 19, aged 56; Charles A. Wishart, of Pittsburgh (Univ. of Penna., '75), March 11, aged 71.

Beaver: *New Members*—Evelyn S. H. McCauley, Beaver; Leedom Sharp, Hookstown. *Reinstated Member*—William H. Shields, Koppel.

Bucks: *New Member*—George S. Deibert, Sellersville.

Bradford: *Deaths*—Cyrus L. Stevens, of Athens, (Coll. of Phys. & Surg., Keokuk, Ia., '80), Feb. 19, aged 72; W. Frank Harshberger, of New Albany (Eclectic Med. Coll., Cincinnati, '81), recently, aged 70.

Cambria: *New Members*—Harold M. Griffiths, Johnstown Trust Bldg.; Francis M. B. Schramm, 276 Cooper Ave., Johnstown.

Carbon: *New Member*—Solomon L. Hermany, Bowmanstown.

Clearfield: *New Member*—Harry G. Shaffer, Grampian.

Dauphin: *New Member*—David E. Hoff, 212 Dauphin Bldg., Harrisburg.

Elk: *New Member*—Lewis L. Hobbs, Jr., Ridgway.

Fayette: *Removal*—Clyde W. Conn from Smithfield to R. F. D. No. 5, Uniontown.

Greene: *New Member*—George M. Scott, Waynesburg.

Jefferson: *New Members*—P. P. Horner, Conifer; Leo W. Zimmerman, Timblin.

Lawrence: *New Member*—Edgar M. Parlette, Johnson Bldg., New Castle.

Luzerne: *New Members*—J. Alan Corson, Parsons; Wilson C. Marsden, Plains; Angelo L. Luchi, Hazleton; Francis J. Conlon, Pittston; Rosanna N. McKinney, 548 Miners Bank Bldg.; John F. Edwards, Miners Bank Bldg.; Edward E. Marsh, 11 E. Hollenbeck Ave.; Edward L. McGinley, 11 So. Grant Ave., Wilkes-Barre.

Montour: *Resignation*—Joseph P. Shearer, Washington, D. C., formerly of Florence, S. C.

Philadelphia: *New Members*—Samuel A. Lowenberg, 1905 Spruce St.; Henry B. Schmookler, 1320 S. Fifth St.; Leon O. Davis, 4515 Paul St.; William J. MacMurtrie, 912 S. Forty-ninth St.; William Samueli, 530 Pine St.; Samuel Nicholas, 1532 S. Sixth St.; Clifford B. Farr, 4401 Market St.; G. Widener Knadler, 2034 W. Tioga St.; Frank D. Levy, 1859 N. Eighth St.; Elizabeth L. Martin, Friends Hospital, Frankford; Joseph B. Wolfe, 1314 S. Fifth St.; Edward H. Campbell, 314 Kent Road (Cynwyd); Russell C. Weimer, 8031 D St. (Fox Chase); Benjamin D. Parish, 1927 Spruce St.; Augustus F. Kempton, 2118 Pine St.; Charles Roland, 6387 Drexel Road; Leonidas Farmakis, 1123 Mt. Vernon St.; William F. Morrisson, 2044 Chestnut St.; Francis M. Schilling, 2014 Kinsey St. (Frankford); Rebecca C. Reiss, 918 N. Fifth St.; Theodore E. Orr, Widener Memorial School, Broad and Olney Aves.; R. Grant Barry, Philadelphia Hospital for Mental Diseases, Thirty-fourth and Pine Sts.; C. W. Nissler, 1034 S. Fifty-fourth St., Philadelphia. *Reinstated Member*—Henry W. Cattell, 3712 Irving St., Philadelphia. *Deaths*—Mary T. Miller, of Philadelphia (Women's Med. Coll., '99), recently; Louis H. Jacob, of Philadelphia (Med. Chirurg. Coll., Phila., '01), recently, aged 44.

Schuylkill: *New Members*—Walter G. Bowers, Schuylkill Haven; John W. Arbogast, Tower City; Raymond C. Dengler, Delano; William A. Burke, Albert P. Knight, William F. Leigh, Pottsville; John L. Flannigan, Silver Creek; Charles H. Knauer, Oliver K. Speer, Tamaqua; Irvin E. Sausser, Valley View; Francis M. Quinn, Minersville; James A. Longo, Shippton; Robert F. Mausser, Ashland; Willard G. Mengel, Coaldale.

Snyder: *New Member*—A. Jerome Herman, Middleburg.

Washington: *New Members*—James A. Schurgot, California; Dell D. Butler, Fredericktown.

Westmoreland: *New Members*—L. S. Strawn, A. W. King, West Newton. *Death*—Florence L. Marsh, of Mount Pleasant (Jeff. Med. Coll., '68), recently, aged 75.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since February 17th. Figures in first column indicate county society numbers; second column, State Society numbers:

Feb. 20	Cambria	54–65	3028–3039	$60.00
	Mercer	59–61	3040–3042	15.00
	Delaware	59	3043	5.00
	Mifflin	17	3044	5.00
	Dauphin	95–100	3045–3050	30.00
	Erie	69–78	3051–3060	50.00
	Lackawanna	62, 68, 70–78	3061–3071	55.00
Feb. 21	Lackawanna	79–84	3072–3077	30.00
	Clinton	14–16	3078–3080	15.00
	Delaware	60	3081	5.00
	Clearfield	31–38	3082–3089	40.00
Feb. 23	Berks	60–99	3090–3129	200.00
	Montgomery	127–134	3130–3137	40.00
Feb. 24	Venango	18–19	3138–3139	10.00
	Delaware	61–63	3140–3142	15.00
	Bedford	1–3	3143–3145	15.00
Feb. 26	Dauphin	101–106	3146–3151	30.00
	Mercer	62	3152	5.00
	Clinton	17–20	3153–3156	20.00
Feb. 27	Lackawanna	85–91	3157–3163	35.00
	Somerset	26	3164	5.00
	Allegheny	478–702	3165–3389	1,125.00
	Cambria	66–75	3390–3399	50.00
Feb. 28	Clinton	21–22	3400–3401	10.00
	Mifflin	18–19	3402–3403	10.00
Mar. 1	Bradford	16–22	3404–3410	35.00
	Delaware	64	3411	5.00
	Lycoming	77–87	3412–3422	55.00
	Luzerne	2–85	3423–3506	420.00
Mar. 2	Armstrong	27–40	3507–3520	70.00
	Northumberland	29–38	3521–3530	50.00
	Center	1–10	3531–3540	50.00
	Cambria	76–87	3541–3552	60.00
Mar. 3	Somerset	27–28	3553–3554	10.00
	Beaver	28–33	3555–3560	30.00
	Delaware	65–66	3561–3562	10.00
Mar. 7	Schuylkill	1–100	3563–3662	500.00
	Dauphin	107–113	3663–3669	35.00
	Venango	20	3670	5.00
	Lawrence	22–32	3671–3681	55.00
	Mifflin	20	3682	5.00
	Clearfield	39–50	3683–3694	60.00
	Center	11–14	3695–3698	20.00
	Juniata	7	3699	5.00
	Wayne	9–16	3700–3707	40.00
	Lackawanna	92–108	3708–3724	85.00
	Union	12–13	3725–3726	10.00
	Jefferson	1, 3–18	3727–3743	85.00
	Lycoming	88–94	3744–3750	35.00
	Warren	1–36	3751–3786	180.00
	Adams	20–23	3787–3790	20.00
	Delaware	67–68	3791–3792	10.00
	Mercer	63	3793	5.00
	Dauphin	114–125	3794–3805	60.00
	Clarion	25–27	3806–3808	15.00
	Northumberland	39–45	3809–3015	35.00
	Lackawanna	109–123	3816–3830	75.00

Mar. 12	Mifflin	21	3831	5.00
	Beaver	34–41	3832–3839	40.00
	Mercer	64	3840	5.00
	Cumberland	21–26	3841–3846	30.00
	Columbia	22–26	3847–3851	25.00
	Westmoreland	3–100	3852–3949	490.00
	Cambria	88–105	3950–3967	90.00
	Luzerne	86–111	3968–3993	130.00
	Philadelphia	1001–1250	3994–4243	1,250.00
Mar. 13	Bucks	41–60	4244–4263	100.00
	Lackawanna	124–128	4264–4268	25.00
	Center	15–16	4269–4270	10.00
	Elk	10–21	4271–4282	60.00
Mar. 14	Delaware	69	4283	5.00
	Greene	1–26	4284–4309	130.00
Mar. 15	Lackawanna	129–138	4310–4319	50.00
	Perry	1–3	4320–4322	15.00
	Perry	4–5	4323–4324	10.00
	Jefferson	19–34	4325–4340	80.00
	Delaware	70	4341	5.00
	Franklin	27–34	4342–4349	40.00
Mar. 16	Fayette	38–73, 76–81	4350–4391	210.00
	Susquehanna	1–10	4392–4401	50.00
	Center	17–18	4402–4403	10.00
	Lycoming	95–101	4404–4410	35.00
	McKean	19–24	4411–4416	30.00
	Clearfield	51–59	4417–4425	45.00
	Carbon	1–27	4426–4452	135.00
	Washington	68–102	4453–4487	175.00
Mar. 17	Perry	6–7	4488–4489	10.00
	Lebanon	1–11, 13–34	4490–4522	165.00
	Snyder	1–5	4523–4527	25.00
	Beaver	42–48	4528–4534	35.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

230 State St., Harrisburg

WORKMEN'S COMPENSATION ACT

The amendment to the Workmen's Compensation Act of 1915, which has been referred to in these columns in a previous article, was presented to the House of Representatives Tuesday, March 20th, by Representative Herman Earley, of Harrisburg, and is known as House Bill No. 846. We quote this amendment in full as follows:

> "To amend paragraphs E and F of Section 306, also paragraph 7 of Section 307 of an act, approved the second day of June, Anno Domini one thousand nine hundred and fifteen (Pamphlet Laws, seven hundred and thirty-six), and amended the twenty-sixth day of June, Anno Domini one thousand nine hundred and nineteen, entitled "An act defining the liability of an employer to pay damages for injuries received by an employee in the course of employment; establishing an elective schedule of compensation; and providing procedure for the determination of liability and compensation thereunder," and providing when the same shall become effective.

Section 306. The following schedule of compensation is hereby established for injuries resulting in total disability:

(e) From the time the disability begins the employer shall furnish reasonable surgical and medical services, medicines and supplies when and as needed, unless the employee refuses to allow them to be furnished by the employer. Compensation for such medical and surgical services and supplies furnished to the employee shall be paid to the medical doctor or surgeon by the employer regardless of where such services are rendered, either at a hospital, home or elsewhere. Compensation for such medical and surgical services and supplies shall in no case exceed the prevailing charge in any community in which the services are rendered for like medical and surgical services and supplies to other individuals in like circumstances. If the employer shall, upon application made to him, refuse to furnish such services, medicines, and supplies, the employee may procure the same, and shall receive from the employer the reasonable cost thereof within the above limitations. If the employee refuses to accept the services furnished him by the employer, the employee shall be responsible for all medical and surgical services rendered him during the time of such refusal.

From the time the disability begins the employer shall furnish reasonable hospital care, nursing, medicines, dressings and supplies, when and as needed, unless the employee refuses to allow them to be furnished by the employer. Compensation to the hospital shall not include the services of a medical doctor or surgeon, but compensation for such services must be paid directly to any medical doctor or surgeon furnishing such medical and surgical services.

Resident internes serving in hospitals are denied the right to collect fees for services rendered injured employees under this Act.

Any medical doctor, surgeon, hospital or institution, treating an injured employee under the Workmen's Compensation Act, shall within one week after the beginning of such treatment furnish the employer or his insurance carrier a certificate stating that such medical, surgical or hospital service is being rendered.

If the employee shall refuse reasonable surgical, medical, and hospital services, medicines and supplies, tendered to him by his employer, he shall forfeit all right to compensation for any injury or any increase in his incapacity shown to have resulted from such refusal.

Any medical doctor, or surgeon, hospital or institution, incorporated or otherwise, shall be and have the right of party in interest in any proceedings had or begun under the provisions of this Act, and shall have the right originally to file a petition for compensation for any such services, medicines and supplies, furnished under the provisions thereof.

Wherever the conditions are such that the employer is unable to furnish medical and surgical services, medicines and supplies, hospital or institutional care, medicines and supplies, and the treatment, care, nursing and supplies be furnished in an emergency wherein the absence of the employer or the condition of the employee make it impossible for such employer to provide such services, medicines and supplies, or for the employee to procure them for himself, said services, treatment, care, medicines and supplies shall be paid for by the employer to the medical doctor or surgeon for such medical treatment and supplies, and to the hospital or other institution for such care, nursing and supplies at the usual rates in the community for such emergency service.

(f) Should the employee die as a result of the injury, the period during which compensation shall be payable to his dependents, under section three hundred and seven of this article, shall be reduced by the period during which compensation was paid to him in his lifetime, under this section of this article. No reduction shall be made for the amount which may have been paid for medical and surgical services and medicines, nor for the expenses of the last sickness and burial. Compensation for medical and surgical

services, medicines and supplies, also hospital care, nursing, medicines and supplies shall be paid for as hereinbefore required under the act, irrespective of whether the employee dies within the ten-day period or not. Should the employee die from some other cause than injury, the liability for compensation shall cease.

Amend Section 307, paragraph 7, to read as follows: "Whether or not there be dependents as aforesaid, the reasonable expenses of the last sickness and burial, (without deduction of any amounts theretofore paid for compensation or for medical expenses), payable to the dependents, or, if there be no dependents, then to the personal representatives of the deceased."

We trust that every industrial surgeon in Pennsylvania will be interested in the passage of this amendment. If there is constructive criticism to be offered it must be done so at once, and the office of the Executive Secretary will be pleased to consider such communications.

There has been introduced into the Senate by Hon. Mr. Joyce Senate Bill No. 332, which contains an amendment to Section 306, paragraph (e). The amendment in this revision of the Workmen's Compensation Act does not change the status of the industrial physician, and it will be our purpose to offer as an amendment the changes which we note above.

CHIROPRACTIC BILL

Since the hearing of House Bill No. 36 no further action has been taken.

OSTEOPATHIC BILL

Senate Bill No. 242, introduced by Hon. Mr. Smith, of Dauphin County, if passed, would license all those who desire such license to practice major or operative surgery in the state of Pennsylvania upon payment of a fee of $25.00 and a possible perfunctory examination. A more thorough examination will be required of all new graduates. It hardly seems possible that such sweeping requests could be made of the Legislature as are found in this bill, and which was on third reading and final passage March 26th. We asked that it be recommitted for the purpose of making amendments thereto. The hearing was held April 3, 1923, and the decision of the Committee on Health and Sanitation of the Senate has not been reported at this writing.

ANTIVACCINATION BILL

On March 20th in the Committee on Health and Sanitation of the House a hearing was held to discuss the proposed amendment to the Vaccination Act. The medical profession was splendidly represented, and it seems hardly possible that the Committee will report this bill out, and if they do, we hope it will be with a negative recommendation.

NONMEDICAL TECHNICIAN BILL

A substitute has been offered for House Bill No. 348, known as the nonmedical laboratory technician bill. This was done after a conference with the pharmacists and chemists at a meeting of the Medical Legislative Conference in Philadelphia on March 16th. We hope that the profession interested in this subject will get back of the bill and influence their representatives and senators for its passage.

THE CAUSTIC ALKALI BILL

House Bill No. 395 has not been reported out of the Committee on Health and Sanitation, but we trust it soon will be and that it will secure passage in the House and Senate. Members are urged to favor the passage of this very necessary act.

NOTICE

CALL FOR VOLUNTEER PAPERS PITTSBURGH SESSION

The Committee on Scientific Work, at its first meeting at Harrisburg, February 6, 1923, instructed that a call be issued for eleven volunteer papers for the Pittsburgh Session of the Medical Society of the State of Pennsylvania, October 2 to 4, 1923.

(1) The subject and a brief outline of all papers must be furnished the Committee before April 20, 1923.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of the Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman,*
5321 Fifth Ave., Pittsburgh, Pa.

COMMUNICATIONS

To the Editor of The Atlantic Medical Journal.

Dear Sir: I wish to inform you that the first section of the train to California to attend the American Medical Association in San Francisco has been filled.

We are now arranging for a second section and trust this also will be filled.

Applications should be sent to Mr. J. S. McAndrews, Tours Manager, Lifesy Tours, Inc., 1472 Broadway, New York City. Yours very truly,

Edward Livingston Hunt, Secretary.

CLOTHING FOR CALIFORNIA COMFORT

We are receiving a number of inquiries regarding the climate and character of clothing to be worn at the time of the meeting of the American Medical Association here the last week in June. At this time of the year it is likely that there will be a certain amount of wind, some fog, and the evenings will be quite chilly. Rain is not expected at this time of year, and the days will be pleasant and delightful.

Persons coming to the annual meeting should bring overcoats and evening wraps; furs are worn by San Francisco ladies in the evening at this time of year. In the southern part of the state and the central valleys the climate will be very much warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts the climate will more nearly approach that of San Franicsco. Persons who expect to travel much in this state will be more comfortable with the ordinary weights of underclothing and with overcoats and wraps to meet the varying climates in different parts of the state.

W. E. Musgrave,
Chairman, Local Committee of Arrangements.
—*Jour. A. M. A.,* March 17, 1923.

County Medical Societies

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

* Deceased.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

April, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—FEBRUARY

The Dauphin County Medical Society had the good fortune to secure for its speaker for the February meeting Dr. A. W. Colcord, of Pittsburgh, surgeon to the Carnegie Steel Company.

Dr. Colcord prefaced his remarks with a most timely and important emphasis on the real scope and future of the general practitioner, decrying the existing tendency to refer immediately to specialists every condition outside the realm of internal medicine. In his opinion the general practitioner cannot be replaced and should be capable, if he is not, of intelligently making use of most of the many diagnostic and therapeutic procedures that ordinarily are relegated to the specialists. Dr. Colcord gave a list of, and presented for examination, the articles he carries in his diagnostic bag, showing the simplicity of their application, and urged the general practitioner to become proficient in their use and thus raise the standard of general practice to where it should be.

Speaking of burns, in the treatment of which Dr. Colcord has been especially interested, and on which he has written several valuable papers, he was emphatic in stressing the importance of asepsis over the many chemical and physical applications always in vogue, giving, however, the formula of his own special ointment, developed by him after experiments with most of the established preparations.

In an interesting discussion of the modern treatment of shock he pointed out the folly, physiological and clinical, of giving heart stimulants.

The treatment of sprains, fracture, hemorrhage, medical and surgical emergencies, gynecological, genito-urinary and obstetrical conditions as encountered by the general practitioner, was ably explained, and many valuable points in handling these cases outside a hospital were described. All of Dr. Colcord's remarks were graphically illustrated by actual demonstration of the instruments and medication used.

The unusual character of the address, as well as the vast store of practical information it contained, was made doubly interesting by the sincere and enthusiastic manner in which it was delivered. All of the members and guests present felt that it was one of the most profitable evenings they had spent at the Society.

W. Minster Kunkel, M.D., Reporter.

ERIE—MARCH

On March 6th Dr. A. A. Brill, of New York City, spoke to the Erie County Medical Society on "The Medical Aspect of Psychoanalysis." Dr. Brill is a distinguished disciple of Freud. He said in part that psychoanalysis is a purely medical subject and may be likened to microscopic examination of the mind. In mental conditions, study begins with abnormal conditions and leads to the study of normal conditions. When a patient is conscious of an organ or function that means that organ or function is abnormal.

The old hospital records of thirty-five or forty years ago show how crude was the knowledge of mental abnormalities. These patients were reported as excited, dull, stupid or demented and subsequent reports only varied the order of these four adjectives. Of course it must be understood at the beginning that psychoanalysis is applicable to functional mental cases only. In institutions for the insane about two-thirds of the cases are functional. When entities were recognized in mental diseases psychiatry was put on a sound basis. In those early days patients were given asafetida and valerian. The neurotics went from clinic to clinic. Often a physician who attended more than one clinic would meet the same patient he had treated the day before in another clinic. This was a sad commentary on the inefficacy of the treatment.

Freud, whose work on psychoanalysis was first published in 1908, was discouraged by the lack of results in his treatment of neurasthenic patients and left Vienna, going to Paris, where Charcot was using hypnotism in his clinic. Freud became Charcot's favorite pupil; but while he was impressed with the power of hypnotism there were patients who could not be hypnotized. He returned to Vienna and became interested in a case of which Dr. Breuer told him. The patient exhibited a case of hysteria treated for a long time by Dr. Breuer without success. She insisted on telling Dr. Breuer in great detail all about an old love affair and at last seemed to be improving under what the patient called the "talking cure." But it was so time-consuming, Dr. Breuer was glad to turn the case over to Dr. Freud. When Freud started he knew no more of sex matters than other people, but he felt he had to inform himself, as patients spoke so much of sex. The psychoanalysists have been censured for placing emphasis on sex. They answer that there are two major impulses which control mankind in general: First, hunger (self-preservation); second, sex (mating instinct, or propagation of the species).

In primitive times man was often in danger of annihilation in striving for food. Under our more advanced civilization, the hunger impulse has been well taken care of by society. Except under most unusual circumstances a man need not starve. But it was made more and more difficult for the sex impulse as society progressed. Legitimate sex life must be deferred at least ten years, often much longer. Nature had made no provision for such suspension of function. The psychoanalysists use sex in its broadest sense and say it is a normal biological impulse, that it is something which must be controlled and in order to be controlled must be understood; consequently it is worthy of serious study. The average person thinks of sex as something lewd and wholly objectionable. The disciples of Freud do not hold to the theory that the sex life begins at the adolescent period. Young children show it in their loves and hates; as they grow older they want love objects. All children at a certain age masturbate. Teachers and parents become excited about this. At puberty the child again becomes more nervous. Masturbation is practically universal. If patients worry about this, later it lays the foundation for a neurosis. Nervous breakdowns are due to mental conditions and never to physical. Neuroses are based on repressions due to struggle between primitivity and civilization. Civilization is based largely on renunciation. If a child is brought up properly, with a proper understanding of sex matters and the reasons for inhibition, he will have no neurosis.

Freud developed certain parts of psychology, such as dreams. He made a study of dreams because patients spoke so much of their dreams. His conclusions were that dreams have a definite function, to relieve nervous tension at night. For instance, a starving person dreams of feasts and festivals of feasting. Everything has a reason. Life is a problem of the conscious and the unconscious. The conscious is only an organ of perception. Everything you do to-day is determined by your past. A human being is only a machine, it can only do certain things well. The unconscious is the primitive impulses. Education is repression of primitivity. Anna M. Schrade, M.D., Reporter.

LUZERNE—FEBRUARY-MARCH

The regular meeting of the Society was held in the Society Rooms on Wednesday evening, February 7, 1923, at 8:30 p. m. It was unanimously decided to give a testimonial dinner in honor of Dr. Charles H. Miner, who was recently appointed by Governor Pinchot as State Commissioner of Health. The dinner committee appointed were Dr. S. P. Mengel, Dr. H. L. Whitney and Dr. E. L. Meyers. The doctors also decided to conduct an extensive postgraduate medical group, and invitations to join this group will be sent to all members. Dr. Malcom Guthrie read an interesting report on public health in this community, giving a striking comparison between conditions in the year 1922 and those in 1921.

Dr. L. L. Rogers gave an exceptionally good illustrated lecture on "Infection of the Accessory Sinuses," which created considerable comment.

The meeting of March 7th was held in the Society Rooms at 8:30 p. m. Regular routine business was transacted, with reports of committees. Applications for membership were received from Dr. Francis B. Eveland, of Wilkes-Barre, and from Dr. Martin L. Connors, of Pittston. Dr. Rogers and Dr. O'Brien, of the United States Public Health Service, were visitors at the meeting.

Dr. R. R. Janjigian, Pathologist of the Wilkes-Barre City Hospital, read a paper before the Society "Urging Postmortems." Dr. Janjigian told physicians they are needed to further the cause of medical science. He also stated that the great medical discoveries of the past have been made through the clinical examination of patients before death and a postmortem after death. The discussion, which was keen, was taken up by the following doctors: John T. Howell, M. B. Ahlborn and Charles Long. The discussion was closed by Dr. Janjigian. H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

Joint Meeting With Philadelphia Pediatric Society

February 14th

A joint meeting of the Philadelphia County Medical Society and the Philadelphia Pediatric Society was held Wednesday evening, February 14th, in the Hall of the College of Physicians, the subject for the evening being "Commonly Unrecognized Conditions in Infancy," Dr. Riesman presiding.

Dr. Philip A. Sheaff, the first speaker, demonstrated his pocket sphygmomanometer, which is described in the *Journal of the A. M. A.* for July 22, 1922. The disadvantages of the larger mercury instruments lie in the fact that they are too cumbersome and not readily carried about, while others are reduced in size at the expense of the scale. Dr. Sheaff's instrument is less cumbersome, is very compact when closed, and has no projecting portion, so that it is easily carried about. It has a scale graduated from 0 to 300 mm. of mercury, which has been compared to a standard, and also boasts a fine adjustment. It will give dependable service if well taken care of and not turned upside down, for instance.

In answer to a question, Dr. Sheaff stated that as yet no price had been set on the instrument, that this, which he had made himself, was the only one in existence.

Dr. Seth A. Brumm discussed "Otitis in Infancy," introducing his paper by saying that it was the aim of all pediatrists and otologists to prevent middle ear infection in children, or to restore the individual to the normal state with as little change as possible. He took

up otitis media: 1, in children; 2, as a complication or sequela in acute infections; and 3, in systemic diseases.

In children the infection is second in frequency of occurrence to diseases of the respiratory and gastro-intestinal tracts. Every physician should accustom himself to examining the ear and be able to identify what he sees. Infants do not localize pain well, and often a diagnosis must be made on the presence of a bulging drum alone. There will be an elevation of temperature, sometimes tenderness in front of the ear, and rolling of the head from side to side. The infrequency of mastoid complications justifies the otologist in waiting to incise a bulging drum until there is a definite increase in tenderness on the tragus and over the tip of the mastoid, with a high temperature. Pyelitis, typhoid and pneumonia must be excluded in a differential diagnosis, even with a running ear.

In the exanthemata there is the greatest rapidity of tissue destruction if the middle ear becomes involved, with a tendency toward chronic suppuration. The acute stage is rarely seen by the otologist. Acute suppurative otitis media occurs most commonly in scarlet fever, while the simple catarrhal form also occurs, involving the bony structures. In measles we find both the suppurative and catarrhal types, with a more frequent mastoid complication. Middle ear infection may complicate diphtheria, arthritis, pneumonia or adenitis.

Because of its anatomy and blood and lymph supply, the middle ear can become a focus of infection and cause nephritis, neuritis, tenosynovitis, endocarditis, etc. In closing, Dr. Sheaff recommended to every practitioner that: 1, the otoscope and speculum are necessary for diagnosis; 2, the middle ear is a source of infection in children; and 3, there is no more contra-indication to the use of vaccines in children than in adults.

In discussing the paper Dr. Babbitt spoke of the complexity of etiology, the embryonic continuation of tissue, mechanical irritation by cough, destructive agencies, and errors in the care of the child.

Dr. A. Graeme Mitchell read a paper on "Pyelitis in Infancy." In brief, he said that pyelitis was one of the most common causes of fever in infancy, and the least likely to show symptoms for localization, the only disturbance being that of micturition, which is mild and easily overlooked. It occurs more frequently in girls than in boys, and the age of incidence is under two years. Infection may be by the hematogenous route or may ascend the ureters. There is an irregular, septic fever of 103 to 107 degrees, with vomiting or convulsions at the onset. Pain on urination is due to an associated cystitis. The stools are green and lumpy, containing mucus, so that attention is called to the gastro-intestinal tract. The outstanding feature is a fever without a discoverable cause. Pus in larger or smaller amounts will be found in the urine. It is a good plan to estimate the amount of pus by counting the cells as you would W. B. C.'s.

To treat, give 15 grains of potassium citrate with 15 grains of sodium bicarbonate four or five times in twenty-four hours to turn the urine alkaline. If that is not a success, give benzoic acid to make the urine acid, and then administer hexamine four or five times a day. Since the organisms became accustomed to one medium, it is well to alternate the alkaline with the hexamine treatment. Infection may be from the colon bacillus or the streptococcus. Administer fluids in large amounts, intraperitoneally if the child is dehydrated. The alkaline treatment should be continued after the urine is free from pus to prevent a recurrent attack. Whenever a child has fever, the urine should be examined, says Dr. Mitchell.

In the discussion that followed, Dr. Bradley spoke of malaria as a differential diagnosis, and mentioned the accompanying anemia which should be treated. He advised the use of bromocresol purple to replace litmus as an indicator, for a more delicate test.

The general opinion was against cystoscopic treatment, but one physician cited a case which was improved after one washing of the pelvis.

Dr. Franz M. Groedel, of Bad Nauheim, Germany, talked by invitation on "Movements of the Heart," with demonstration by moving pictures. He showed pictures of the apparatus he has constructed for the taking of moving pictures of the heart. A film ribbon 24 cm. wide and 20 m. long, sensitive to the x-ray on both sides, is placed between two intensifying screens. The whole is enclosed in metal, with a small window, allowing the x-rays to enter. Pictures are taken at the rate of sixteen per minute. They show three movements: peristalsis along the border of the shadow, the pumping, and the pendulum movements. The pictures are used to demonstrate the heart movements to students, and they enable one to look on each phase and part at the same time. Electrocardiogram pictures are taken at the same time. The contraction and excitation of the heart are so connected that they cannot be distinguished.

Dr. Jenks, President of the Pediatric Society, now took the chair.

The next paper was by Dr. J. Claxton Gittings, on "Scurvy in Infancy." He gave a short history of the disease and its etiology, reviewing the characteristics of the antiscorbutic vitamine. Scurvy takes from three to six months to develop, so that it is most often seen in artificially-fed babies of six months to a year old. In an acute case, handling the child is very painful, the thighs are tender to the touch, there is extravasation under the periosteum, the gums are red, the temperature is moderately elevated, pulse and respirations are rapid, and there is a secondary anemia. Subacute or latent cases are more difficult to diagnose. The weight may be stationary or increasing very slowly, the child is irritable, anemic, and has no appetite. The condition of the gums and the tenderness of the legs varies from day to day. The presence of R. B. C.'s in the urine is important. The most important differential diagnosis is that of osteomyelitis, a condition which cannot wait for treatment. The history will help in that case. Scurvy will also simulate simple purpura, poliomyelitis, enterocolitis, osteosarcoma, acute nephritis, etc. The x-ray will help in diagnosis, showing a shadow where the periosteum is lifted up, and a thickening along the epiphyseal-hypophyseal juncture. The treatment is two to four ounces of orange juice, lemon juice, or four to eight ounces of strained tomato juice. Prophylaxis includes the routine use of orange juice when food has been heated, beginning as early as one month. In conclusion, Dr. Gittings urged that physicians never forget antiscorbutic treatment, never overlook the diagnosis of scurvy, especially when there is any hemorrhage or extravasation under the skin, or any non-suppurative infiltration or swelling.

In the discussion, it was suggested that correction of nutrition of the child from the bottom up be added to the treatment.

The last paper was by Dr. Warren B. Davis on "Sinusitis in Infancy." He showed pictures to illustrate the anatomy and the development of the various sinuses, and gave as causes for infection cold, retention of secretion in the nasal passages, foreign bodies

and deflections. There may be a chronic cough, epistaxis, pain in the distribution of the fifth nerve, watery or purulent discharge from the nares, congested turbinals, and enlarged tonsils and adenoids. The infection is usually mixed. Treatment is conservative, and consists of the application of argyrol, establishing drainage and the use of autogenous or mixed stock vaccines. The tendency is toward recovery without operation, 1, because the age precludes long chronicity; 2, polypi and spurs are not so common; and 3, there is better ventilation than in adults. In chronic cases operations are done to establish drainage with the least possible destruction of tissue.

In the discussion, the importance of remembering the unerupted second teeth in maxillary sinus treatment was emphasized.

February 28th

Subject: The Nursing Problem in Philadelphia. Dr. Riesman, Chairman, presiding.

Dr. Riesman opened the meeting by stating the problem, and questioning how it was to be met. He then called upon Dr. A. E. Blackburn as the first speaker.

At the outset Dr. Blackburn stated his position. He presented facts as a member of the Registration Board for Nurses, but his opinions were personal, and not the individual or combined opinions of that Board.

The great progress during the last twenty years in the working, living and educational conditions of nurses concerns two groups, the advanced group with the university degree idea, wishing to advance preliminary requirements and theoretical training; and the small institutions with no endowment and greater overhead expenses than income, protesting against the present requirements. For financial reasons it is necessary to have training schools, while nurses are not eligible for Red Cross work without at least the minimum training. The State Board, an advisory, not a mandatory, agent, has compiled lists of accredited schools, which show an increase in the number of training schools as well as in the number of nurses graduating yearly, and yet there is a scarcity of nurses available for private duty. The opening avenues in Red Cross work, welfare, industrial hygiene, health departments, positions as executives, teachers, head nurses, etc., are more inviting, with better remuneration and shorter hours.

The Society appointed a committee to investigate conditions but no report was made. The State Medical Society also appointed a committee, and received a fair proportion of replies to queries sent out through the state. These were correlated, and general deductions made. The resulting suggestion of the Board to undertake revision of curriculi met with much criticism. The Rockefeller Foundation reports that "Conditions are inadequate for the high grade of nurse needed," and "The safety of the patient and the responsibility of the medical and nursing professions demand high educational standards."

The well-to-do and the very poor are provided for, but the burden of the problem falls on those of limited means. The speaker believes that a well-trained nurse deserves all that she earns, but a good proportion of the sick can be cared for by one less well trained. The law requires only two years of training. Was the third year added for the advantage of theoretical and practical training, or because it was a useful asset to the hospital? Dr. Blackburn suggests that training schools for well educated nurses give serious consideration to pupils less well equipped, and that both classes of schools consider the training of "attendants." Every nurse should be registered yearly and definite fees should be established for the various grades of nurses.

Miss Clayton, head of the Philadelphia General Hospital Training School for Nurses, spoke from the nurses' standpoint.

The problem, which is both national and local, and which cannot be solved except by all those interested, has its foundation in economics, evolution and religion. Revision of standards and curriculum is a step upward, and high standards are not the cause of the shortage of nurses. Nursing is now a profession. Comparatively few nurses become mercenary, and not more so than doctors. The conduct of a few should not prejudice one against an entire group. The present is a transition period. Fewer doctors are being graduated yearly, so that medical service is as unavailable as nursing care. As the private practice of medicine is being supplanted by the group, so private nursing is giving way to the group, and nurses are invading the doctors' field. The direction of progress is toward preventive medicine. The outlook is encouraging for higher standards of ethical professions. The speaker supplemented Dr. Blackburn's two-year training with a preliminary school term of four months, so that theoretical class work would not interfere with practical duties, while the pupil would be more intelligent for further study in the class and wards. For the highly specialized, she recommended three years in college preceding the practical training of two years in the hospital, the college courses to include those qualified to equip the student to meet people and their problems intelligently. Another class, which has to do with the mechanical part of nursing should be limited. It is directly concerned with the training of the better class of domestics.

Dr. George M. Piersol took up the problem from the point of view of the physician.

Alleviation of human suffering is a bond of interest between physicians and nurses and there should be team-work and coöperation, with mutual respect. Their functions supplement each other, but are not identical. The following criticisms of private duty nurses have been made: They are not obtainable, they are discriminating in the type of cases they will take, they are lacking in the necessary fine attributes, and charge exorbitant prices regardless of their efficiency. A greater number of patients are demanding nurses, while relatively fewer are willing to enter the field of private duty nursing, largely because of the demand in other activities, where they can do good to a greater number than if restricted to a few. This is the outcome of the expansion of welfare and public health work. Specialized nurses are valuable and necessary in some cases, but it is an inconvenience to the physician and a hardship to the patient when nurses are not willing to take on certain cases in various surroundings, seeming to think first of their own comfort and convenience. Some nurses are not lacking in skill, but in tact and in consideration of the feelings of others, failing to grasp their problems. One reason for this fact is that younger girls are entering the profession, before their characters have been molded by home life and they have attained a certain poise and a proper perspective of life. Formerly they were actuated by the spirit of altruism, while now they merely compare the opportunities of the training school with other pursuits. This does not apply only to nurses. Physicians do not begrudge nurses proper financial return, but it seems that the salary should be related to the kind of service rendered.

Better nurses are not obtained by lowering the standards, and better preliminary education should be insisted upon. A practical nurse is useful among the poorer classes, but they are already taken care of by public health and hospital facilities. The solution seems to lie in the public health movement, one nurse to several patients, so that only the rich could afford a full-time nurse. Nurses should be trained physically, mentally, morally and temperamentally, and training schools should be educational units, well equipped and well endowed.

Dr. Richard C. Norris, in speaking "From the Surgeon's Standpoint," emphasized points already made—the demands of the middle class, the influence of the spirit of the times, the economic problem, and the question of supply and demand. People do not want to work twelve hours, but a doctor cannot stop at eight hours. Why should the inefficient receive the same salary as the efficient? The Florence Nightingale spirit seems to have disappeared, giving way to selfishness and commercialism. The work and sacrifices involved, together with the high standards, keep many women from the profession. The curriculum should be revised by an understanding group, not left to the nurses themselves. Nurses are well trained in theory now, but lack practical knowledge. Why should not their lectures be given by practically trained nurses, rather than by physicians? Formerly two years' training was considered sufficient. Why not have postgraduate courses for instruction in special types of work? There is too much of the idea of labor unionism among the nurses. Personality makes successful nurses. More girls might be induced to enter the profession if they were to be trained in a practical nursing knowledge. They must be imbued with a spirit of service, not with a knowledge of medicine.

The discussion was opened by Dr. F. Hurst Maier, chairman of the committee appointed to study the problem.

Three years ago Dr. Piersol appointed a committee to investigate the causes for the falling off of applicants, and the following were suggested: 1, the long hours, hard work, and strict régime, which are largely corrected now; 2, the age limit and educational requirements; 3, the imposing array of curriculum hours. It was suggested to cut down the curriculum one half, the last year to be spent in practical bedside work, with elective lectures in special lines. High school girls might be stimulated to enter the profession if the Department of Education would introduce a six months' elective course on nursing into the last year in high school. This course would comprise the lectures of the first year in training school, for which the girls would receive credit, and be followed by two years' training. Registered nurses would teach the course. A committee should be formed to bring about the fixation of definite requirement.

Dr. Hunter, a member of the delegation from the New Jersey State Medical Society, was asked by the President to say a few words. Dr. Hunter came with the committee representing the Standardization of Hospitals, with the same question before them—the dearth of private nurses. The question is one of supply and demand, and the problem must be solved upon an economic basis.

Dr. Alice W. Tallant continued the discussion. In Dr. Tallant's experience, nurses' classes interfere with their practical bedside work, so that there is a lack of unity in their work. Is it not possible to have more class work in the first year? One reason for the private nurse question is that they are trained in hospitals and not in private homes. In the same way medical students become interested in patients only as interesting cases. It is necessary to make simple cases and home nursing interesting. Some training schools send out nurses with the visiting nurses, which seems to be a good plan. Nurses need to learn how to notice whether or not a patient is comfortable, and to think of them as individual persons who need care. Dr. Tallant agrees with Dr. Norris that there is too much teaching of nurses by physicians rather than by nurses.

Because of illness, Miss Katherine Tucker was unable to be present to take part in the discussion.

Dr. G. Harlan Wells: There should be two types of nurse, the high-grade nurse with a good preliminary education, interested in public health work, etc., who needs technical and highly specialized training; and an ordinary, mechanical individual with a preliminary course of three months and one year of hospital training. As for salaries—no one can dictate what they should charge. Dr. Wells said he had no criticism to make of nurses as a body.

Dr. Thomas A. Branson: Dr. Branson spoke of the present day trend toward desire for entertainment and the commercialism which is creeping into the medical as well as the nursing professions. We need the nurse of twenty years ago, who was imbued with actual bedside experience and a large store of common sense, and we need a moderately trained nurse to supplement the trained one. Nurses now tend to be too scientific to make the patient comfortable. Let us have "less science and more art, less commercialism and more heart, a greater vision, and a profound element of common sense."

Dr. W. Blair Stewart, one of the visiting committee from New Jersey: The same nursing problem is before the committee. The hospitals and training schools in New Jersey have been visited in person, to find the good and bad points in each, and to attempt to get close to the nurse. Some conferences have been held, and in ten days another conference is to be held with the nurses organization, two representatives from each hospital in New Jersey to meet with the committee. In the opinion of the committee, too much attention is paid to the amount of money. There is too much registration for certain cases to the exclusion of other lines, and a marked shortage of nurses when they are most needed. The younger nurses are more technically trained, but are not as practical as those who also have the advantage of years. The older nurses do not stand in with the trade union methods.

President of the Philadelphia Hospital Association: The various angles and different viewpoints presented make the sum total confusing as to conclusions. All nurses are not mercenary because a few are, any more than all doctors are drug peddlers, and the class should not be judged by the few. Cutting down the course would not flood hospitals with nurses.

Dr. Freeley spoke for the individual nurse. The Directory for Nurses has been fairly successful in trying to serve the public, physicians and nurses. There is a large demand for attending nurses especially, and more nurses without the high standard of education seem to be needed.

General discussion: Just as retrenchment of the laws for medical education is being agitated, so it seems that training schools will have to retrench along certain lines to bring the problem back to normalcy. A scathing editorial was read which described the

nurse as a "superlatively unpleasant person to have about, ignorant, coarse, and ill-mannered. A servant girl can take temperature and pulse and at the same time be agreeable and obedient."

Miss Frost, of the Visiting Nurse Society: All admit the scarcity of nurses. Young girls to be trained as nurses are not so hopeless as has been intimated, and they are the only supply to draw upon. The spirit of service is not entirely dead. In fact, a great deal of it can be found among the leaders of the profession. More extensive use might be made of the visiting nurse for hourly service. Nurses object to cases with few requirements. Relief for the nurse on twenty-four hour duty might be managed in that way.

Miss Clayton: The Rockefeller committee has made a study of the condition of nurses in hospitals and private homes, the report of which is being sold by the Macmillan Company. Every doctor, nurse and educator is urged to read the report, in order to find the cause for the trouble and its solution.

Dr. Roberts objected to the editorial which had been read, as being a misrepresentation of the nursing profession as a whole. Nursing is only an occasional occupation, which does not last throughout the year, and therefore nurses should be paid correspondingly high salaries. Why should not a nurse receive thirty dollars a week if a surgeon can get a thousand dollars for an operation? However, nurses should not change their prices over night.

At the close of the meeting, a motion was made and carried that a committee representing physicians, nurses and laymen, be appointed to investigate further the nursing problem, and that the committee submit a report not later than the last meeting in April.

Anna Ruth Winter, Reporter.

STATE NEWS ITEMS

DEATHS

Dr. Oliver H. Fisher, of Reading, aged 76 years, died on February 4th. He was graduated from the University of Pennsylvania School of Medicine in 1872.

Dr. Howard Luther Diehl, of Gettysburg, who was graduated from Hahnemann Medical College of Philadelphia in 1876, died on February 2d from pneumonia, aged 64 years.

Dr. Ezra Grumbine, of Lebanon, aged 77 years, died on February 16th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1868.

Dr. C. W. Webb, of Wellsboro, died on February 5th. Dr. Webb was born in 1855 and was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1879. He was County Medical Director of Tioga County.

Dr. Stewart Newell Pool, of Pittsburgh, who was born in Delaware in 1867, and was graduated from the University of Pennsylvania School of Medicine in 1891, died of pneumonia on February 19th at his home.

Dr. Walter de la Montanye Hill, of Everett, died on February 9th at the Allegheny Hospital, Cumberland, Md., from pneumonia. Dr. Hill was born in 1877 and was graduated from Jefferson Medical College of Philadelphia in 1900.

Dr. R. N. Greenfield, of Penn Line, died of heart disease on March 11th. He was aged 83 years and was a graduate of the University of Michigan Medical School, Ann Arbor, Mich., in 1869. He was a practitioner for more than 50 years before retiring.

Dr. D. Edgar Hutchison, of East Downingtown, recently passed away, aged 41 years. Dr. Hutchison was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1905. He spent the past winter in Florida in an effort to regain his health, but failed to improve and lived only a short time after his return home.

Dr. Stephan A. Hunter, of Pittsburgh, aged 71 years, died on February 20th. He was graduated from Jefferson Medical College of Philadelphia in 1878, was ordained to the Presbyterian ministry in 1877, and served as a missionary in China from 1879 until 1891. He was also author of several books written in Chinese.

Dr. Charles Ammon Wishart, died on March 4th at his home in Pittsburgh after an illness of several weeks. He was born in Washington in 1852, the eldest son of Dr. and Mrs. J. Wilson Wishart. After his graduation from the University of Pennsylvania School of Medicine, Philadelphia, in 1875, he entered the Western Pennsylvania Hospital as resident physician. Since 1878 he had been practicing in Pittsburgh, first as a general practitioner and later as an eye specialist. He was the founder of the Eye and Ear Hospital, now the Eye and Ear Dispensary of the University of Pittsburgh.

BIRTHS

Born to Dr. and Mrs. L. M. Knauber, of Williamsport, February 22, 1923, a son.

Dr. and Mrs. John L. Good, of Harrisburg, have announced the birth of a daughter, Margaret Lynn Good, March 4, 1923.

Dr. and Mrs. William W. Farr, of Germantown, are being congratulated upon the birth of a son, William Wilberforce Farr, Jr., March 10, 1923.

MARRIAGES

Dr. Leo W. Zimmerman, of Timblin, and Miss Katherine Zapp, of Louisville, Kentucky, were united in marriage on January 31st.

Announcement has been made of the marriage of Dr. Roy Deck and Miss Mabel Rice, both of Lancaster, on February 6th, at Oak Lane.

ITEMS

The engagement of Miss Emma Haag to Dr. L. W. Frederick, of Reading, was recently announced.

Dr. and Mrs. W. B. Henderson, of Philipsburg, recently sailed for South America on the American College of Surgeons' cruise.

Dr. Howard S. Reeser, of Reading, recently sustained a fractured femur while attending to his practice, from which he is recovering very nicely.

Drs. John A. Klump and Ella N. Ritter, of Williamsport, are touring with the American College of Surgeons, visiting clinics throughout South America.

The train for the special 25-day tour from New York City to the meeting of the American Medical Association in San Francisco, gotten up under the auspices of the Medical Society of the State of New

York, is already filled. Another train will be arranged for if 125 more subscribers can be secured. In order to do this, however, it will be necessary for applications to be in not later than the 15th of April. All applications should be sent direct to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

The Westmoreland County Medical Society has issued invitations to a Surgical and Medical Clinic to be held at the Westmoreland Hospital in Greensburg, on Friday, April 20, 1923, at 1 p. m. The Medical Clinic will be in charge of Dr. Thomas McCrea, Professor of Medicine of the Jefferson Medical College and Hospital; and the Surgical Clinic will be in charge of Dr. Wayne Babcock, of Philadelphia. Following the clinics a banquet will be held in the Penn Albert Hotel. Dr. William Davidson, Superintendent of Pittsburgh public schools, will be one of the after-dinner speakers at the banquet.

GENERAL NEWS ITEMS

A Preliminary Program has been issued for the Thirty-fifth Annual Meeting of the American Pediatric Society, which will be held at the French Lick Springs Hotel, French Lick, Indiana, May 31st, June 1 and 2, 1923.

The National Board of Medical Examiners announces the following dates for its next examination:

Part I, June 25, 26, 27, 1923.
Part II, June 28, 29, 1923.
Part I, Sept. 24, 25, 26, 1923.
Part II, Sept. 27, 28, 1923.

All applications for these examinations must be made on or before May 15th. Further information may be obtained from the secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Dr. Hubert Work was lately appointed secretary of the Interior by President Harding, to succeed Mr. Fall. He had previously held the post of postmaster general. Dr. Work was a practicing physician for twenty-five years in Pueblo, Colo. When the United States entered the war he retired from the active practice of medicine and volunteered in the medical corps of the army. After a number of promotions he reached the rank of colonel in the medical corps. Dr. Work went into the government service as an assistant postmaster general under Hays. When Mr. Hays retired from the Cabinet, Dr. Work was advanced to the postmaster generalship.

By Authority of the Director of the U. S. Veteran's Bureau a preliminary course in pulmonary tuberculosis has been given in twenty Veterans' Bureau Hospitals. This course is for the instruction of physicians in the Bureau service. Those who have completed the course are eligible to attend the postgraduate course now being given and to be repeated at intervals, at Veterans' Hospital, No. 41, New Haven, Conn., and at Fitzsimons General Hospital, Denver, Colorado. These latter schools began March 1st and 5th respectively. The chief instructor of the New Haven School is Dr. Nathan Barlow, of the Public Health Service. The Denver School is in charge of Major E. H. Bruns, M.C., U. S. A., chief of the Medical Service. While these courses are intended primarily for personnel now in the service of the Bureau, it is hoped that later courses will be open to those who wish to take up this specialty and enter the service of the Bureau. The course is most thorough and will last at least two months in each school.

The general supervision of both the Preliminary and the Postgraduate courses is in charge of the Clinical Director of Tuberculosis in the Central Office of the Bureau, Washington, D. C. The desire of the director is that the ex-service beneficiaries of the Bureau suffering from pulmonary tuberculosis may receive the best and most scientific treatment.

UNITED STATES CIVIL SERVICE EXAMINATION

Salaries

Grade A .....Up to $3,250 a year
Grade B .....Dp to $4,250 a year
Grade C .....Up to $5,500 a year

Service

Veterans' Bureau.—For filling positions of physicitn, acting assistant surgeon, medical examiner, and medical referee, for full-time duty at the above salaries; and for part-time duty as physician, medical examiner, attending specialist and consultant, at a salary to be determined by the services rendered.

Public Health Service.—For filling positions of acting assistant surgeon at $480 a year for part time to $2,400 and $3,600 a year for full time.

The United States Civil Commission announces an open competitive examination on April 5, 1923, for physicians. There are 94 vacancies in the above services in Pennsylvania.

Range in Salary.—The entrance salary within the range stated will depend upon the qualifications of the appointee as shown in the examination and the duty to which assigned.

Bonus.—Appointees to the Public Health Service at annual compensation of $2,500 or less, whose services are satisfactory, may be allowed the increase granted by Congress of $20 a month.

Citizenship and Sex.—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles.

Subjects and Weights.—Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	*Weights*
1. Education and training	30
2. Experience	70
Total	100

Applications.—Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Secretary of the Third U. S. Civil Service District, Postoffice Building, Philadelphia, Pa., or to the Secretary, United States Civil Service Board of Examiners, at any large first- or second-class postoffice in Pennsylvania, New Jersey or Delaware. Applications should be properly executed, including the medical certificate, to be executed by physician in Federal Service where possible, but excluding the county officer's certificate and both vouchers, and must be filed with the undersigned prior to the hour of closing business on April 5, 1923.

Further information in regard to these examinations can be obtained from the undersigned.

Secretary, Third U. S. Civil Service District,
402 Postoffice Building, Philadelphia, Pa.

THE VISIT OF M. COUE

Emile Coué, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coué and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration, a lack of the mystical which will probably result in speedy oblivion. Coué was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers: demands that were an inevitable result of the publicity he has received. M. Coué claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coué frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious result was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coué demonstration contained much to recall the vaudeville hypnotist, now almost extinct; the magic words, the mesmeric passes and even the old parlor trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doomed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coué works are as old as history. Nancy, the town from which he came, was the home of a school of scientific hypnotism, under the leadership of Liébeault and Bernheim, which was famous in the sixth and subsequent decades of the last century. It is error to assume that physicians have ignored such merits as do underlie these practices. The abrupt relief of hysterical symptoms by suggestion and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics; unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure; it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.—*Jour. A. M.A.*, Feb. 17, 1923.

INFLUENCE OF VARIOUS SYMPTOMS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS

The comparative value of certain symptoms in cases of pulmonary tuberculosis which aid clinicians to predict for their patients something of their ultimate chances of recovery is discussed by F. B. Trudeau, Saranac Lake, N. Y. (*Journal A. M. A.*, March 24, 123), on the basis of the present condition of 980 patients. The way the disease began apparently plays little or no part determining in its future course. Only 53 per cent of these patients whose sputum was positive are well and working, as contrasted with 79 per cent among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge is 32 per cent, as compared to only 6 per cent in the negative cases. Sixty-one per cent of the hemoptysic patients are well and working, as compared to 65 per cent of nonbleeding patients, while the death rate is practically the same for the two types of cases; namely, 23 and 22 per cent. The beneficial importance of a gain in weight is very evident. More than 67 per cent of these showed a gain in weight averaging 8½ pounds (3.8 kg.), as contrasted with only 28 per cent who lost weight, and approximately 5 per cent whose original weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent, respectively, contrasted with 57 and 27 per cent of those who lost weight. Patients whose weight remained stationary did practically no better than those who showed a loss of weight. The symptomatic importance in prognosis of the pulse is emphasized. Cases are rated as "pulse positive," in which a pulse rate of 90 or over persists for five consecutive days, and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent of the negative pulse patients are well and working, as compared to only 49 per cent of those having tachycardia, while only 16 per cent of the former class are dead, as compared with 38 per cent of the latter. Cases are classified as "fever positive" when the patient's temperature was 99.5 F. or over for five consecutive days, which could not be explained by any other cause than tuberculosis. The percentage of "deads" among febrile patients is nearly as great as the percentage of "wells." A positive family history seems not to have any prognostic value.

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

ON MEDICAL ORGANIZATION*

OLIN WEST, M.D.

CHICAGO

I want to express my very sincere appreciation of the privilege extended to me in representing the American Medical Association, as its Field Secretary at this, the 133d annual meeting of the Medical Society of Delaware. When I read the charter of the Medical Society of Delaware yesterday, it thrilled me to see that it was dated 1789. My state medical association will within the next dozen years celebrate the 100th year of its existence. I recently had the privilege of attending the annual meeting of the Medical Society of the State of Pennsylvania, which I recall is more than seventy years old. There must be some reason why medical societies can exist for 75, for 100, for 133 years. There must be some purpose, some destiny for the Medical Society of Delaware to perform. There must be some virtue in medical organization.

The scheme of medical organization in the United States is wonderfully comprehensive, and is almost perfect. There is a tendency, however, to get away from the original scheme of organization, and I was greatly pleased in looking over the constitution of the Medical Society of Delaware to find that it is virtually the same as that adopted at the suggestion of the Committee on Reorganization of the American Medical Association in 1902. Most of you are familiar with the scheme of the organization of the medical profession in this country, which makes the county medical society the basis and unit of organization, the county medical societies composing the state medical association or society, and the state medical associations composing the federacy which we know as the American Medical Association.

There are in this country more than 150,000 physicians. The membership of the American Medical Association, made up of the membership of the component county and the constituent state associations, is something more than 80,000—approximately 84,000. Thus we have a very large unaffiliated body of physicians who are not connected with medical organization, and in that fact is to be found one of the weaknesses of our organization to-day. And while there are so many outside the pale of organization, it is unfortunately true in some places, here and there, that there are some men in the organization who should not be in. The man who belongs to his medical society just because by virtue of his membership he is entitled to certain privileges in other societies, or the man who belongs to his medical society because by virtue of that membership he may secure reciprocity if he moves to another state, is certainly not worth much to his society. So it appears to us who are studying medical organization in this country that while we want and greatly need to bring into the organization many of those who have not become affiliated, we also want to scrutinize very carefully all applications for membership in our Association. The American Medical Association has made it possible for any society in this country to secure information about almost any man who may make application for membership in any society. Several associations are taking advantage of that service and do not accept applicants until they have the record as it is compiled at the headquarters of the American Medical Association.

Another trouble is that so many of our societies exist in name only. They do not meet regularly, and when they do meet a comparative few perform all the work of the society. It has been estimated that 15% of the men in the medical societies do all the work, scientific and otherwise. My own observation, after a service of some ten years as a state association secretary, is that 10% is nearer the true figure, rather than 15%, and thereby hangs the tale. Whenever a state medical association or whenever the national organization takes definite action on a proposition, it is supposed to represent the wishes and sentiments of the entire American medical profession. Sometimes it does; sometimes it does not altogether do so, largely because in the component county medical societies, few of the members will participate in the deliberations and the work of the societies. It is extremely difficult under such circumstances to find just where the weight of opinion lies.

I believe that the success that has come to medical organization in this country, which has

*Address delivered before the Medical Society of Delaware, Dover, October 10, 1922.

been a very measurable success, in spite of those little faults that might be mentioned, has been due to the fact that our medical societies have, for the most part, devoted themselves to scientific matters. It seems, from my study of the history of medical organization, to have been the purpose of the founders of organization to make the medical societies first of all useful for the purpose of increasing scientific knowledge and making the medical profession as nearly scientifically perfect as possible; second, to serve, by reason of such perfection as they might so attain, the very best interests of the public. There are those, however, who seem to have the feeling that what we need instead of organization, with officers and leaders, is unionism with agitators. There are mighty few of that kind, but there are some, and it is the duty of the medical organization to oppose and stop, as far as can be done, the efforts of those who take that view of the purposes of organization.

It seems to me that the real spirit, or what ought to be the real spirit of the American Medical Association, is exemplified in the life of the man who addressed you this morning—Dr. de Schweinitz, the President of the A. M. A.—a research worker to develop the truths of scientific medicine, a teacher to disseminate the truths, and a physician to apply the knowledge arrived at for the benefit of the public whom he serves. I had an officer of the American Medical Association say to me the other day that never in its history had it had a President who had given as much detailed attention to the work of his office as President, nor who had made as many sacrifices as President of the American Medical Association for the benefit of the profession as has Dr. de Schweinitz.

It is my privilege to appear here as the representative of the American Medical Association, as its Field Secretary. I do not come with any suggestions whatsoever to the Medical Society of Delaware from the headquarters of the American Medical Association, but rather to secure suggestions, if I may, as to how the facilities and the resources of the national organization may be made more valuable and more useful to this society, and to find what you have here that is good that I may be able to pass it on to other state medical associations, so they can use it to their advantage.

The work of the American Medical Association is a tremendous work, and it might interest you for me to tell you just a little about it.

I have been greatly interested in listening to all these papers here this morning, in every one of which I find something to remind me of the activities of the Association in Chicago. The question of "Specialism and Coöperation" that was so splendidly brought out by Dr. de Schweinitz, and many of the other things that have been touched on incidentally and indirectly in those papers, have reminded me of activities that have been carried on by the American Medical Association in the interest of the profession and the general public. The last speaker talked about proprietary medicines. I do not believe that the profession of this country pays as much attention as it should to the very splendid work of the Council on Pharmacy and Chemistry, and the laboratory of that organization. I frequently wonder where we would be from the standpoint of unscientific therapeutics had it not been for the work of that Council. I wish every member of this Society might come to Chicago, and spend an hour or two in the offices of the Council and in its laboratory, and see just what the work of that Council is and how it is done. Carefully and thoroughly and persistently they have gone into the claims that have been made for hundreds and hundreds of "remedies," so-called, of all sorts and kinds. You should see how many hundreds have been proved worthless. It is a pity that more of the medical profession do not avail themselves of the information that has been made available by the work of the Council on Pharmacy and Chemistry.

You are familiar with the work of the Council on Medical Education and Hospitals which, of course, has been far-reaching in the matter of medical education in this country. That Council is now devoting itself, in addition to the work that it has been carrying on, to a study of clinics and dispensaries, and is carefully considering questions relating to group practice that have been recently raised.

The Council on Health and Public Instruction which for years has carried on a work for public education, has been divided now by the creation of the Bureau of Legal and Legislative Medicine. There are a great many in our membership who seem to think if they can get legislation enacted, all ills and evils will be cured. I believe if we can stop the passage of some legislation, that we will accomplish a great deal more than if we secure the passage of so much legislation. That is merely a personal opinion, and is not to be regarded otherwise.

The Bureau is now devoting itself to numerous problems that are of interest to members of the profession throughout the country. The question of medical licensure is being studied. The matter of the regulation of narcotics is being studied carefully, and there has been some effort made to secure relief from the

burdensome and ever-changing rules and regulations that are being imposed on the medical profession in the dispensing of narcotics. I do not know just what the Bureau has in mind with respect to the control of narcotics and narcotic legislation. I hope that it will eventually get to the place where they will influence Congress and secure relief from the unjust imposition of a $3 tax on the physicians who must use narcotics in the treatment of diseases.

The regulation of the cults is a thing that seems to be of very acute interest to the medical profession throughout the country. I believe if the profession would read the story of medical organization during the last 75 years, that they would get a new viewpoint about this cult business. I wonder what would happen if we could legislate them all out of business by to-morrow morning? There would be as many to-morrow night. They have always been here, and I have no doubt they will always be here—legislation or no legislation. I understand that an effort is to be made on behalf of the medical profession throughout the country to secure the enactment of laws which will require all persons who want to practice the healing art to conform with certain educational requirements. That, I believe, is a fair basis for a law, and as I understand the matter, is the purpose that is uppermost in the minds of the men throughout the states who are dealing with this particular subject. The Bureau of Legal and Legislative Medicine hopes to be of service in connection with that matter and many others that I might talk to you about.

The Council on Health and Public Instruction, as I told you a while ago, has been carrying on for many years an intensive effort to do what it can toward disseminating the truth about medicine. It is hoped in the very near future that the publication of a lay medical journal will be begun. Perhaps you had better call it a magazine. Considerable work has been done looking to the early publication of this magazine, and it is not improbable that before the middle of the summer next year, the publication of a lay medical magazine by the American Medical Association will be an accomplished reality. It is believed that this will render a most helpful service to the people and to the profession.

There is one other publication that I want to take time to bring to your attention, and that is the Bulletin of the American Medical Association. This Bulletin is now a very modest little publication, but it is hoped to enlarge it and to extend its usefulness, and that it may be used by the officers of state, county and district medical societies and by the members of those component societies as a medium for exchange of ideas and opinions that are of interest to the medical profession, aside from those relative to purely scientific matters. This bulletin is being sent to all the officers of state and county associations. The subscription price is nominal—only 50c a year. We hope to have the county societies subscribe to this bulletin in groups, and if they will do that, the subscription price will be reduced to a sum even less than 50c a year. I want to appeal to the officers and members of the Medical Society of Delaware to help us make this little bulletin grow and help it make for itself a place for useful service in the interest of medical organization throughout this country.

I want again to express my sincere appreciation of the privilege of addressing you. I should like to feel that I had time, without imposing on you, to tell you more in detail about the work of the American Medical Association. I am authorized to extend a pressing invitation to every member of any society that I may have the privilege of addressing, to come to the headquarters of *your* A. M. A. Look it over from top to bottom, and see for yourself what is there, what it is being used for, and investigate as carefully as you may wish, the purposes and the plans that are in operation.

EDITORIALS

GREETINGS FROM DELAWARE

The Medical Society of Delaware is one of the oldest such societies in the United States, having been incorporated by special Act of the Legislature at Dover, February 3, 1789. Our last annual meeting was, therefore, the 133d such meeting—a feat of which few societies of any character anywhere can boast. Our hoary age and honorable traditions command the respect of all who are familiar with them. Thus, in this, the first number of our joint medical journal, we come to the great state of Pennsylvania not as parvenus nor as errant sons returning to the fold, but rather as elder brothers who believe that by our united efforts a greater good can be accomplished for the professions of both states. We hope it may so prove.

Our little state, for good and sufficient reason styled the "Diamond State," has ushered in what should prove only the beginning of a really great journal. As was Delaware the first state to ratify the Federal Constitution, so is she the first state, of several approached, to ratify the amalgamation of several journals that one greater publication may be attained in this territory. As was Delaware the state that cast the deciding vote for the Declaration of Independence, so

is she the state that casts the deciding vote in subjugating local efforts that larger regional efforts may be possible. This scheme of journal amalgamation is not unique in this country, there being three such journals now, but the present instance should develop into the largest, the best and the most influential of all such journals.

Delaware has no medical teaching institutions, and hence has of late years not been a great contributor to medical literature. The standard of practice here, however, will compare favorably with that of most communities. It is to be hoped that this new journal may stimulate our men to greater literary efforts, for we believe we have many men who are hiding their light under a bushel. Our leaders need only a little sympathetic encouragement to make them come out; and this, we believe, the new journal will supply. Great men and great things do not necessarily have to come from great communities. The first president of our State Society, James Tilton, was also the first Surgeon-General of the United States Army. Who knows but that we may now be harboring more Tiltons?

We offer our greetings to our neighboring brethren, and rest assured that with their coöperation the Atlantic will develop into one of the outstanding medical journals of the country. We shall endeavor to do our part towards this end. We are confident that this effort will result in a much better knowledge and understanding of the profession of one state with that of the other—an end quite worthy of itself. For ourselves we merely bespeak your kind indulgence and assistance. Let every member of both societies do all within his power to assure the unqualified success of the Atlantic Medical Journal.

W. E. B.

DOCTORS AND LEGISLATION

One often wonders that physicians, with the tremendous influence they wield, accomplish so little when they promulgate legislation affecting public health. In Delaware, as elsewhere, they are laughed out of court, any bill presented by doctors being considered as a joke, or else as some practical scheme which deserves but scant attention.

There are several reasons for this attitude on the part of the layman.

The doctor is regarded as a "healer." His business is to alleviate physical suffering and "cure" disease. Any person who can accomplish this is, in the opinion of the layman, a doctor. A man in pain is intent on one thing only—to obtain relief. Whether that relief is afforded by a college professor, a country doctor, a quack, a chiropractor, a Christian Scientist or a bottle of colored dishwater is immaterial to him, so long as the pain disappears. He, therefore, judges the doctor, not by college standards, but by what he can do or promises to do for his particular ailment. Unfortunately, the average layman knows nothing about self-limitation of infectious diseases; nor is he aware of the tendency on the part of tissues and organs to maintain a normal balance. He, therefore, gives credit and praise to anybody or anything associated with his recovery. Hence, Lydia's compound is as standard a remedy as digitalis, and a chiropractor as deserving of credence as the greatest internist. Appreciation of preventive medicine and public health requires intelligent vision, and of that the average layman—he who sits in our legislative halls—is lamentably devoid.

When we turn to the physicians, we find them extremely individualistic, self-centered and mostly disunited. Petty jealousies tend to destroy whatever feeling of fellowship there is left of the college days. In matters pertaining to public interests, the rank and file are indifferent, while the few leaders are mistrusted and frequently abused. The doctors have not learned to play or work together, and when the need of a solid organization becomes imminent, they are found strong only on paper. "My house is on the outskirts," runs a Russian proverb, and this characterizes the attitude of the average physician. Under these circumstances a successful fight at the legislature is out of the question.

The only remedy is education of the public on the one hand and organization of the medical profession on the other—not paper organization, but strong, virile societies in which every member considers it his duty and privilege to attend meetings and participate actively in the affairs of the society.

We have been thinking of the practice of medicine in terms of science and art; let us think of it as a professional guild with all the obligations and loyalties that imposes upon its members.

A. R.

INDICATIONS FOR TONSILLECTOMY

The indiscriminate slaughter of innocent tonsils and the "tonsil drives" carried on in a number of cities remind one of the good old days when there was not an ovary that was safe from the onslaught of the abdominal surgeon. It was said then that the reason a famous surgeon left Philadelphia for Baltimore was that he removed all the ovaries in Kensington and was anxious to transfer his activities to a virgin field. The

appendix, as we know, was taken up next, and lately, the tonsils and the teeth.

From the standpoint of surgical risk, it is a perfectly harmless procedure, particularly in children, to remove healthy tonsils. It is a question, however, whether the individual whose healthy tonsils are guillotined is not deprived thereby of organs essential to the body economy. We know little about the function of the tonsils, yet our observation of the workings of other organs and tissues in the body should lead to the conviction that nature demands from every bit of tissue the performance of some useful work. "No work—no food" applies to the human organism. (We wish that the same rule could be applied to our social body.) The fact that no apparent ill effects follow the removal of healthy tonsils merely goes to show that the function is probably minor in character; but it is there nevertheless.

When it comes to diseased tonsils, there is no question about the imperative necessity of their removal. Recent studies have demonstrated the far-reaching effects of focal infection; and infection of the tonsils is frequently the starting point of endocarditis, chorea and arthritis. The great problem is to separate the sheep from the goats—to determine which are and which are not infected tonsils.

A very definite aid in this direction is the fact that whenever infection involves the lymphatics, the lymph nodes become enlarged and painful, and frequently undergo suppurative changes. Infected tonsils cause enlargement of the lymph nodes which drain that particular area, and a knowledge of the distribution of these nodes and their relation to the tonsils is essential.

The pharyngeal tonsils, which are situated below the body of the sphenoid bone and lie between the posterior pharyngeal wall and the spinal column, receive lymph from the posterior nasal fossa, the vault of the pharynx and surrounding tissues. The efferent lymphatics enter the retropharyngeal space, pass downwards between the insertion of the rectus capitus anticus major muscle and the cervical vertebræ, then through the sheaths of the great vessels to the posterior border of the sternocleido-mastoid. Here they turn sharply and directly outwards into a gland situated just below the tip of the mastoid process. Therefore, enlargement of this gland indicates infection of the pharyngeal tonsils.

The efferent vessels from the faucial tonsils enter glands placed just beneath the anterior border of the sternomastoid.

The submaxillary glands lying along the rami of the jaw drain the gingival, dental, glossal and mental areas, and enlargement of these glands points to infection of the gums, teeth, tongue, chin and the thyroid area.

With the condition of the lymph nodes as a guide, we can decide in each case the fate of the tonsils, the only exception being hypertrophied tonsils, which while not the seat of infection, interfere mechanically with proper breathing.

A. R.

LEGISLATIVE NOTES

The present session of the Legislature brings to mind the most unpleasant thought that the profession of medicine has not been as wide awake as it should have been. There seems to be little chance that either the welfare bill or the alcoholic medicinal bill will get out of committee, to say nothing of passing. While our minds are necessarily now centered, somewhat belated, on medical laws, let us plan to meet the menace of the chiropractors. There are scarcely a dozen here now, but we have advance information that some 20 are planning to come here within the next few months. Such practice is in violation of our medical practice act, in that they practice the healing art without due licensure. That they will apply to the next Legislature for such legalization is practically assured.

In the meantime there bids fair to be a great influx of them anyhow. If legalized, with their own examining board, Delaware will have to go through the same terrible ordeal that New Jersey suffered, where under their own board 714 were licensed in one year, practically without any examination at all. This farce had to stop when New Jersey passed their new law two years ago, making examination in the fundamentals necessary, and examination in each peculiar school of therapy under their own school. This law has effectively closed that state to the chiros, and Delaware is going to be the dumping ground for a lot of them unless means are taken to prevent it.

We should imitate the New Jersey law, or else adopt something similar to the law proposed for Minnesota. Since this latter proposition is somewhat new, we give it in full below. The law in New Jersey will be discussed at a later time.

Following is the proposed Basic Medical Practice Act in full:

Bill for an act defining the practice of healing, creating a board of examiners in the basic sciences and establishing its powers and authority.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Sec. 1. Definitions. For the purposes of this act the practice of healing is defined as follows:

A person practices healing who shall offer or undertake, by means other than mental or spiritual, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition. The practice of healing includes the practice of medicine and surgery, osteopathy, chiropractic and any other cult, system, or type of healing other than mental or spiritual, that now is recognized or hereafter may be recognized in this state, but does not include the practice of dentistry nor the diagnosing, treating, operating or prescribing for any disease, lesion, pain, injury, defect, deformity, or physical condition of the human teeth, alveolar process, gums, or jaws, or the replacement of teeth by artificial ones, or correcting the malpositions thereof. The sciences essential to the practice of healing are defined as Anatomy, Chemistry, Pathology, and Physiology, hereinafter called the basic sciences.

Sec. 2. Board of Examiners in the Basic Sciences.

There is hereby created and established a board to be known as the State Board of Examiners in Basic Sciences, hereinafter called the board.

Sec. 3. Appointment of Board by Governor and Qualifications of Members.

Within thirty days after the passage of this act, the Governor shall appoint the state board of examiners in the basic sciences, consisting of four residents of Minnesota who shall be appointed for a term of four years or until their successors are appointed, except that, of the first members, one shall be appointed for one year, one for two years, one for three years and one for four years. One member of said board shall be a competent anatomist; one shall be a competent chemist; one shall be a competent pathologist; one shall be a competent physiologist. No member of said board shall be engaged in the practice of healing.

Sec. 4. Organization and Procedure.

Within thirty days after being so appointed, said board shall assemble and organize by electing a president, vice-president and secretary-treasurer. Said board shall have a common seal. They shall adopt minimum standards of preliminary education.

No rule of said board shall discriminate against any school or system of healing. Three members of said board shall constitute a quorum. Said board shall meet on the third Tuesday of February, March, June, August, September and December in each year and at such other times as a majority of the board may deem necessary. The secretary shall keep a record of all of its proceedings, including a register of all applicants for examination, giving their ages, educational qualifications and the results of their examinations. Said book records shall be prima facie evidence of all matters therein recorded.

Sec. 5. Fee, Examination, Certificate.

Any person desiring to practice healing in this state shall apply to the secretary of said board and pay a fee of ten dollars. The examinations conducted by the board shall be both practical and written and shall be held in the laboratories of the College of Science, Literature and Arts of the University of Minnesota. If a candidate shall attain a grade of 75 per cent or more on all four subjects he shall receive a certificate signed by the president and secretary and bearing the seal of the board. If he fails in one subject he may be reëxamined in that subject within one year without further fee. If he fails in two or more subjects he shall not be examined until after the lapse of one year and then only upon reapplication and the payment of a further fee of $10.00.

Said board may issue a certificate to any applicant who presents acceptable evidence of having passed examinations in the basic sciences aforesaid before a legal examining board of another state, the National Board of Medical Examiners, or a foreign country, provided the board of examiners in basic sciences is convinced that the educational and examination standards were as high as those set forth in the rules of said board. Applicants for such acceptance of previous examinations shall pay a fee of $5.00.

Sec. 6. All fees received by said board shall be paid to the secretary-treasurer, who shall forthwith deposit the same with the state treasurer, to be kept in a separate fund for the use of said board; which fund shall be paid out only on written orders signed by the secretary-treasurer of said board. No expense shall be incurred by said board other than that which may be covered by such fees. The secretary-treasurer shall give a bond in such sum as the board may deem necessary. He shall on or before August first of each year file with the Governor a report of all the receipts, disbursements and transactions of said board for the preceding fiscal year. The members of the board shall be entitled to ten dollars per day and necessary expenses while attending meetings and conducting examinations of the board.

Sec. 7. Certificate required before examiation for practice of healing.

No board at present existing or which may hereafter be established for the examination and licensing of practitioners of healing shall admit any candidate to take its examination nor license any candidate by reciprocity nor in any other way until said candidate presents an official certificate of having successfully passed the examinations conducted by the board of examiners in the basic sciences or an official certificate of said board of examiners in the basic sciences accepting the results of a previous examination, as provided in Sec. 5 of this act. Any licensing board may accept the certificate of the examiners in basic sciences in lieu of the examinations in said basic sciences required by law to be conducted by such licensing board.

Sec. 8. Nothing in this act shall apply in any way to any person licensed to practice any system of healing in this state prior to the passage of this act.

Sec. 9. This act is supplementary to existing laws and not a repeal thereof except in so far as this act be inconsistent with any provision of existing laws.

Sec. 10. Said Board of Examiners may revoke any certificate of any person guilty of immoral, dishonorable or unprofessional conduct, but before this is done the holder of said certificate shall have thirty days' notice and after a full and fair hearing of the charges made, by a majority vote of the whole Board, the certificate may be revoked, subject, however, to the right of the holder of said certificate to appeal to the District Court of the proper county on questions of both law and fact.

Sec. 11. Any person violating any of the provisions of this act, or who shall wilfully make any false representation to the board of examiners in applying for a certificate, shall be guilty of misdemeanor, and upon conviction shall be punished by a fine of not more than one hundred dollars and not less than ten dollars.—*Minnesota Medicine.*

HOSPITAL NOTES

It begins to appear that the year 1923 will be an eventful one for Wilmington's hospitals. This city has always been deficient in hospital beds, if one accepts the rule that 5 beds per 1,000 of population is the proper standard. At present the capacity of the general and special hospitals (exclusive of psychopathic and tuberculosis hospitals) is as follows:

Hospital	*Beds*
Delaware	188
Physicians' and Surgeons'	90
Homeopathic	122
Jones	30
Walter	20

Since the population is approximately 110,000, this total of 400 beds is 150 less than the standard of the community should be. This shortage, in part, will be made up by a new institution to be conducted by the Sisters of St. Francis. The new St. Francis Hospital will be built on the block bounded by Seventh, Clayton, Eighth and du Pont Streets, and will have an initial capacity of 60 beds, to be increased ultimately by the addition of four pavilions to a total capacity of 225 beds. The new buildings and grounds will cost approximately $250,000, of which about half will be paid by the Sisters, and the remainder will be raised by the people of Wilmington. An intensive campaign is now being waged to secure these funds, the success of which is a foregone conclusion.

The main building will be 175 feet in length, three floors in height, with a fourth floor over the central portion. In addition to the 60 patients, it will accommodate 12 Sisters, 14 nurses, 2 internes and all necessary help. The equipment will be most complete and modern. It is understood that the new institution will be "open," at least so far as private privileges are concerned, though a staff is being considered for the public ward and dispensary work. When one considers the phenomenal success the Sisters of St. Francis have had in conducting hospitals all over the country, especially St. Mary's Hospital, Rochester, Minn. (the Mayo Clinic Hospital), there can be no doubt of the success of this new enterprise.

In addition to the above, the Physicians' and Surgeons' Hospital is planning an ambitious program of expansion, to occupy several years. The present quarters are inadequate in location, size, design and equipment, and it is proposed to remedy this by building the new units as they may be needed on the South Broome Street site, where the hospital already owns two whole city blocks, and where the contagious disease unit is now located. Plans are now being drawn by a leading firm of architects for the complete plant, and details of the first unit are nearing completion. The strictly first-class design of these units yields a plant second to none for its size, and while slightly more expensive than was at first anticipated, the increased expense is more than justified by the results, for a standard has been set locally that will stand for many years.

The first unit, which will temporarily house the whole hospital of 60 beds, will ultimately have a capacity of 90 beds. Other units will give the hospital a final capacity of 375 beds. the plans calling for a group of eight buildings. The style of architecture will be Georgian.

Rumors are very persistent that the Homeopathic Hospital will soon become an "open" institution, somewhat similar to the Physicians' and Surgeons' Hospital. This hospital, with its excellent location and beautiful buildings, has suffered severe losses this past year by the death of several of its leading physicians, and the influx of new members of the homeopathic school has reached an unprecedentedly low level. The fact that Hahnemann Medical College in Philadelphia is now the only Class A homeopathic school in the country may also have some influence on the local situation. There is no question that Wilmington, which has hitherto been one of the strongholds of homeopathy, will see a great decrease in the numbers and influence of this school in the future. This phase of the situation is not local at all, but is found throughout the country, and the closure of five homeopathic schools within the past year is only another indication of the general trend towards wiping out sectarianism in medicine. This is of itself most desirable, though many see in the present movement the ultimate extinction of homeopathy as a distinct medical philosophy. It is practically extinct now in its home country, Germany, and America seems to be its last battleground. Be that as it may, so far as Wilmington is concerned, the net immediate result seems to be the opening of the city's most beautiful hospital to practitioners of the regular school—a privilege many have long desired.

BOOKS RECEIVED

Physics and Chemistry for Nurses, by A. R. Bliss, Jr., A.M., Phm.D., M.D., and A. H. Olive, A.M., Ph. Ch., Phm.D. Third Edition thoroughly revised and rewritten and conforming to the requirements of the standard curriculum (1922) of the National League of Nursing Education. Philadelphia and London: J. B. Lippincott Company. Price $2.50.

How We Resist Disease (An Introduction to Immunity), by Jean Broadhurst, Ph.D., Assistant Professor of Biology, Teachers' College, Columbia University. One hundred and thirty-eight illustrations and 4 color plates. Philadelphia and London: J. B. Lippincott Company, 1923. Price $2.50.

Textbook of Anatomy and Physiology. For Training Schools and Other Educational Institutions. By Elizabeth R. Bundy, M.D. Fifth Edition Revised and Enlarged by Martha Tracy, M.D., Dr. P. H., Professor of Nutritional Hygiene, Women's Medical College of Pennsylvania, Philadelphia, and Grace Watson, R. N., Educational Directress, Philadelphia General Hospital Training School for Nurses. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price $2.50 net.

Textbook of Ophthalmology, by Hofrat Ernst Fuchs, Former Professor of Ophthalmology in the University of Vienna. Authorized translation from the Twelfth German Edition; completely revised and reset, with numerous additions specially supplied by the author and otherwise much enlarged by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York. With 455 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $9.00.

Selected Papers and Addresses, by William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. Philadelphia: George W. Jacobs & Company, Publishers.

Exercise in Education and Medicine (Third Edition). By R. Tait McKenzie, M.D., LL.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Octavo of 601 pages, with 445 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $5.00 net.

Nutrition of Mother and Child, by C. Ulysses Moore, M.D., M.Sc., Instructor in Diseases of Children, University of Oregon Medical School, etc. Including menus and recipes by Myrtle Josephine Ferguson, B.S., Professor of Nutrition, Iowa State College, Ames, Iowa. With 33 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $2.00.

Vital Statistics. An Introduction to the Science of Demography. By George Chandler Whipple, Professor of Sanitary Engineering in Harvard University. Second Edition. New York: John Wiley & Sons, Inc., 1923. Price $4.00 net.

Impotency, Sterility and Artificial Impregnation, by Frank P. Davis, Ph.B., M.D. Second Edition Revised and Enlarged. St. Louis: C. V. Mosby Company, 1923. Price $2.25.

Clinical Laboratory Methods, by Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas, School of Medicine, Kansas City, Kansas. With 69 illustrations and 5 color plates. St. Louis: C. V. Mosby Company, 1923. Price $3.75.

Essentials of Surgery. (For student and graduate nurses and for those interested in the care of the sick.) By Archibald Leete McDonald, M.D., The Johns Hopkins University. Second edition revised with 49 illustrations. Philadelphia and London: J. B. Lippincott Company, 1923. Price $2.50 net.

Optical Methods in Control and Research Laboratories, by J. N. Goldsmith, Ph.D., M.Sc., S. Judd Lewis, D.Sc., B.Sc., F. Twyman, F. Inst. P. Vol. I, Second Edition, January, 1923. Published by Adam Hilger, Ltd., 75A Camden Road, London, N. W. 1, England.

An Orthopedic Surgeon's Story of the Great War. H. Winnett Orr, M.D., Formerly Lieutenant Colonel, Medical Corps, United States Army. Lincoln, Nebraska, December, 1921.

Labyrinth and Equilibrium, by Samuel Steen Maxwell, M.S., Ph.D., Professor of Physiology in The University of California. Illustrated. Philadelphia and London: J. B. Lippincott Company. Price $2.50.

BOOK REVIEWS

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. J. J. R. Macleod, M.B., Professor of Physiology in the University of Toronto, Assisted by Roy G. Pearce, A. C. Redfield, N. B. Taylor, and by others. Fourth Edition. St. Louis: C. V. Mosby Company, 1922.

Two years have elapsed since the third edition of this valuable work was published. Much water has gone down to the sea in these two years, and all the grist that it has brought to the medical profession will be found clearly recorded in this exceptionally interesting book.

The cardiac output, intracardiac pressure, the capillary circulation, the acid-base balance in the blood stream, the normal electrocardiogram, the movements of the stomach, mountain sickness, and pancreatic diabetes, are some of the subjects that have been rewritten or materially changed.

In regard to the cardiovascular function, it is demonstrated that as long as compensation exists, the amount of dilatation and the tone of the heart muscle during diastole determine the output during systole. The influence of nutrition on the cardiac output, that is on the response and demand, is clearly brought out and constitutes one of the practical points which appear whenever possible throughout this work. They are found with very gratifying frequency, and with authoritative demonstrations which carry conviction to the reader. The effect of cardiac stimulants—Strophanthus and digitalis—in assisting to bring about cardiac compensation will be read with satisfaction by many. In describing the estimation of cardiac efficiency by observations on pulse rate and systolic pressure at short intervals after measured exercise (the best method up to the present time), the Barringer claim that an initial drop in systolic pressure immediately after exercise means decompensation, or at least low reserve is not supported so long as the pulse rate and the systolic pressure return to normal within four minutes.

The subject of the emptying of the stomach under normal and under pathological conditions is handled in a masterly way. It is another example of Macleod's practical point of view in everything that he touches.

While he undoubtedly is correct in his assertion that under normal conditions gravity has nothing to do with the emptying of the stomach, he fails to consider that in certain cases of marked ptosis, in which the full stomach sinks to or even into the pelvis, there is a mechanical obstruction due to kinking which can be overcome or corrected by gravity when the patient is put in the proper position. This may be demonstrated on a movable fluoroscopic table, and may be taken advantage of in appropriate cases by having the patient lie on the right side on a bed, the foot of which is elevated 10 or 12 inches, for two hours, more or less, after each meal. The futility of gastro-enterostomy in cases with no pyloric obstruction is well shown.

The acid-base balance in the blood stream is exhaustively discussed and new evidence is introduced. The danger of overdoing in the exhibition of alkalies is made evident. "Fools rush in where angels fear to tread." The nature of diabetic acidosis is clearly discussed and the various reactions of different diabetic patients to starvation is emphasized more rationally than in any other work with which I am familiar.

The epoch-making discovery of a method of producing an extract of the islands of Langerhans which will effectively control corbohydrate metabolism and ketonemia in depancreatized laboratory animals and in human diabetic patients is modestly but clearly set forth.

The section on "the central nervous system and the control of muscular activity," rewritten for the third edition by A. C. Redfield, remains unchanged and is still the best thing in that line in medical literature, pregnant with scientific facts inviting clinical application.

With surprise and with unusual satisfaction one finds the index and the paging of subjects in the fourth edition identical with those of the third edition, in spite of the many changes in substance matter. L. L.

BRONCHOSCOPY AND ESOPHAGOSCOPY, by Chevalier Jackson, M.D., F.A.C.S., Professor of Laryngology, Jefferson Medical College; Professor of Bronschoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania. Octavo of 346 pages with 114 illustrations and 4 color plates. Philadelphia and London: W. B. Saunders Company, 1922.

This volume is a manual of peroral endoscopy and laryngeal surgery based on an abstract of the author's larger work, "Peroral Endoscopy and Laryngeal Surgery." With this abstract as a starting point, the author by making various corrections and revisions, together with numerous additions, has brought the subject of endoscopy up to date as far as is possible within the limits of a working manual.

The author has systematically taken up armamentarium, the anatomy of the tracheobronchial tree and esophagus (endoscopically considered), technique for various endoscopic procedures together with symptoms indicating such procedures, and carefully explained the solution of mechanical problems encountered in the removal of foreign bodies from the air and food passages. He considers diseases of the tracheobronchial tree and esophagus in which endoscopic procedures are indicated, and concludes with an excellent chapter on tracheotomy and the treatment of laryngeal stenosis.

The work crystallizes the practical experience of years of careful observation in a large clinic with an almost unlimited amount of material, and presents the various endoscopic procedures in the author's inimitable, clear, concise manner. It is well illustrated with many original drawings.

No student of endoscopy can afford to be without this working manual prepared by such an eminent teacher. E. J. P.

THE EVOLUTION OF PUBLIC HEALTH NURSING, Annie M. Brainard. W. B. Saunders Company, Philadelphia, Publishers. 454 pages.

Miss Brainard has written a very readable history of the growth of the Public Health Nursing Idea, tracing its germination back to the old practice of "looking after the sick" at the beginning of the Christian era. The early "ordained" deaconess of the primitive church was the forerunner of to-day's Public Health Nurse whom she, however, not remotely resembled. In the first century sanitation meant nothing; medical service was unknown. Not a hospital existed. Such "refuges" and "asylums" as there were, sheltered horrible practices.

Traced through the gloom of the early centuries the semi-organized work of the early deaconesses can be distantly connected with the founding of the first hospital, before the close of the fourth century. Shortly thereafter all the principal small cities of the Roman Empire had them; two were in Constantinople, one in Bethlehem; Alexandria had seven special houses opened for lying-in patients.

Coincidentally, as monasteries came into being some had attached hospices of strangers and sick. But for a thousand years there was no organized care of the sick in their homes. Miss Brainard says: "Constant war seemed the normal state; the 'social question' did not exist; health was a matter of luck." Floods, earthquakes and cyclones were common; pestilence was rampant; epidemics ran frightful courses. The practice of medicine, such as it was, was in the hands of the monks; the church supervised midwifery; and a few uncloistered religious orders cared for the sick poor.

In the twelfth and thirteenth centuries a few illustrious women were the mainsprings of certain nursing orders sanctioned by the Church, not doing true nursing to be sure, as still very little was known of health measures. The long slow growth of human brotherhood, love of neighbor, responsibility for one's fellow creatures' comfort, is traceable by the discerning student back to this first group.

In the stretch of years from the thirteenth to the eighteenth centuries, three great movements hastened the visiting nurse idea. These were, (1) a new humanity, (2) the growth of medical science, (3) the growth of nursing into a profession.

Cruelty in industry, in prisons, and slum degradation awoke the hearts of the lovers of men. Sanitation and preventive medicine had been born and quickened its pace toward the close of this period, making ready for the day when Florence Nightingale could dare think and speak of "health" nurses. She stepped into the foreground in the nineteenth century and from that moment nursing service took on a different form.

There had never been anything quite like her, highly educated, from cultured surroundings, widely traveled, experienced and possessing a practical and soaring enthusiasm, all of which made her ready for the great episode in the Crimea.

Through her, nursing became a profession, and with Mr. William Rathbone, a layman who had "seen a vision" to foster a working plan in Liverpool, there was founded in that city, under great difficulties, a district nursing service.

Much relief work was done by this first group, but the primary idea, to provide nursing care for the poor sick was kept intact, and the movement spread through England. Women of the highest type were held to be essential for the success of such an undertaking, and against much resistance high standards were made and maintained. Bedside nursing, home instruction in hygiene and sanitation was the task for this new organization.

Shortly, villages and hamlets began to beg for similar service. Rural nursing, with its vast maternity problem, had always been pressing, and finally "cottage nurses" appeared as a distinct group just prior to 1890.

All this was in the old world. For the new, New York had its first "hospital" in 1658—it was nothing but a rude shelter. In 1816 Bellevue was combined with the workshop and shortly became "workhouse, almshouse, insane asylum and orphan asylum." Blockley was opened in 1731.

Two pioneer nursing societies were started, one in Charleston, South Carolina, and one in Philadelphia in the same year (1839). Except for these two, no record of any systematic care of the home sick is found before 1877, when "Missionary Nurses" were started in New York State. In 1878, Dr. Felix Adler, of the Ethical Culture Society, launched a group of nurses who were to pay special attention to the sick in the homes.

In 1886 the first American associations were organized, one in Boston, one in Philadelphia, for the sole purpose of providing skilled care in the home. Thus there was introduced into America one of the most valuable social agencies in modern times. Chicago, Buffalo, Kansas City, Baltimore, Providence and Cleveland followed suit.

In 1893 nurses' settlements started. Small numbers of trained nurses living among the people whom they cared for, carried out the modern "settlement" idea. The first of these was the now famous Henry Street Settlement, under Miss Lillian Wald, to-day the best loved woman on the East Side. Richmond, Virginia, started a similar settlement shortly and California followed.

Specialization was the next innovation, and we behold the School Nurse, Tuberculosis Nurse, Baby Welfare Nurse and the Industrial Nurse. The first division of Child Hygiene was founded in 1908 in New York State. In 1912 the Federal Children's Bureau was founded.

Rural nursing as a specific variety, calls for varying methods. Westchester County in New York State pioneered in this. Connecticut followed; then the needy mountain districts of North Carolina.

The Metropolitan Life Insurance Company, operating in the United States and Canada, initiated a unique service among its policy holders and has done the greatest possible service in popularizing the Public Health Nurse. It was a momentous thing that Mr. William Rathbone started in Liverpool.

The nineteenth century was well opened when it was found that organization was essential, and the National Organization for Public Health Nursing was consummated in 1912.

The story of the War and the Nurse is succinctly retold by Miss Brainard, and she shows what an impetus that cataclysm gave to the entire cause. In England the whole nursing movement was almost revolutionized. A Ministry of Health was started with its important bearing on the nursing profession, noticeably affecting state registration, a protection that had long been sought. The war had a lesser effect in America, but greatly strengthened certain fundamental considerations; noticeably, (1) it centered interest in nurses' education, and (2) pay service became a prominent feature, lifting it thus from charity and philanthropy, and supplying to others than the poor and destitute a much-needed aid for which the privileged were eager to pay.

To-day sees a new trend. Great numbers of nurses

are being attached to state and city health departments, thus increasing the use of taxes and the public funds. City, county, state and federal governments are seeking the nurse's service. School, factory, shop and street are her "beat." The entire community is in her hand.

Miss Brainard has done a great service in thus collecting the history of a great movement, and the book can be cordially recommended as concise and edifying reading. Mary Riggs Noble.

THE TREATMENT OF FRACTURES, With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M.D. Ninth Edition Revised. Philadelphia: W. B. Saunders Co.

The ninth edition of Scudder's well-known work has been extensively revised, though the general arrangement of the discussion has been, in the main, preserved. There is still a tendency to touch rather lightly upon, or omit, the less common fractures of the carpus and tarsus. Of fractures near the ankle, though a brief summary of Ashhurst's classification is given, only what is designated as Potts' fracture is discussed, and the pathology underlying both Colles' and Potts' deformity is incomplete in detail. Fractures in and about the ankle, if unrecognized, may often lead to such serious impairment of function that they would seem to deserve a more complete consideration. The arrangement of the paragraphs on tetanus, delayed union and nonunion, and Carrell's treatment of open and infected fractures, tucked in with the consideration of forearm and leg fractures respectively, would rather seem to have come upon a casual resting place.

However, the consideration of the more common fractures, particularly those of the clavicle, humerus and femur, is exceptionally complete and excellent. The details of the sections on methods of examination and treatment are especially noteworthy. Suspension and traction treatment, with numerous simple and detailed explanatory illustrations, and Hawley's ingenious splints, is well portrayed. In this regard, Scudder's work deserves a prominent place upon our "fracture" shelves. Whitman's abduction treatment in fractures of the neck of the femur is strongly advocated and especially well described and illustrated.

An excellent chapter on the use of plaster of Paris and a description of the proper method of leverage in overcoming overriding and shortening in open reduction of fractures are noteworthy high lights.

This new edition has incorporated most excellently the newer methods of fracture treatment but, like the previous editions, seems to specialize in the thorough and careful description of examination and treatment in the common and most frequently met fractures.

W. L. Estes, Jr.

CLINICAL DIAGNOSIS AND SYMPTOMS. By Alfred Martinet, M.D., Paris, France. Authorized English translation from the third revised and enlarged edition by Louis T. de M. Sajous, B.S., M.D., Philadelphia, with 895 text engravings and several full page color prints, complete in two royal octavo volumes. Published by F. A. Davis Company, Philadelphia, Pa. Price $14.00.

Volume I: The plan followed in this work is one of marked simplicity and one well adapted to the requirements of every day medical practice. It is divided into Part One, which deals with General Considerations on Diagnosis, and Part Two, Special Medical Diagnostic Procedures. This includes Examination of the Digestive Tract. In this connection the reviewer feels that the writers have omitted pointing out the advantages of the use of the duodenal tube and have not presented the advantages or disadvantages of the use of the fractional method of gastric analysis. This is to be regretted in such an excellent edition.

Part Two also includes Examination of the Respiratory Tract, including the upper respiratory passages and the intrathoracic respiratory tract. In this connection, the author has not made the subject of râles as clear as he should have done.

Part Two also includes Examination of the Circulatory System, Examination of the Peripheral Circulatory System and the Functional Diseases of Circulation, also Examination of the Blood.

In the author's description of Pericarditis he has unfortunately omitted calling attention to the fact that in pericarditis with a fusion the most marked physical signs may be elicited in the posterior aspect of the chest, resembling consolidation of the lung and oftimes taken for the latter.

The writer then takes up the Examination of the Genito-Urinary Tract, Examination of the Urine, Examination of the Nervous System, Examination of the Skin and its Appendages. He then discusses General Technical Procedures in Medicine, including Parasitology, Bacteriology and Spectroscopic Examination, also, Clinical Mensuration. The final chapter is on Systematical Examination.

The reviewer derived much benefit from the reading of this volume and on account of its completeness, with the few exceptions noted, it will be of great service to any general practitioner in medicine or specialist as it includes so much that is worth while. The work is neatly prepared, illustrations are very clear and helpful and the charts are very illuminating.

Volume II: This volume is devoted to the Analysis of Symptoms. Symptoms are discussed in alphabetical order.

He first takes up the subject of Albuminuria, giving its definition and then discussing in what conditions you are likely to find albuminuria. Alopecia is the next in order, which is nicely described, and this subject is followed by Anemia. He uses a diagram to illustrate the types of anemia, which is helpful. He divides the anemias into the spoliatory type, the toxic infectious type, autotoxic type, insufficiency of the hematopoietic functions and the cryptogenic type.

Next he discusses Aphonia and Hoarseness, using many useful and helpful diagrams for this condition. Next in order is Arhythmia. Under this subject he discusses the normal heart rhythm, extrasystoles (premature beats), paroxysmal tachycardia, respiratory (sinus) arhythmia, auriculoventricular dissociation (heart block), alternation of the pulse and perpetual arhythmia (auricular fibrillation). This is also illustrated with many cardiograms and sphygmograms which are very helpful.

The next subject is Ascites. This is also demonstrated by a very interesting and valuable table. He next treats Asthenia and Fatigue, Chills, Coma, Constipation, Convulsions, Cough, Delirium and Delusions, Diarrhea and Dyspepsia. This is a well written portion as it illustrates how many things are often taken for these symptoms which have an organic basis elsewhere.

This is then followed by Dyspnea, which is very well described, then Edema, Epigastric Pain, Epistaxis and then Exanthemata. This subject is very nicely outlined by the use of charts and of colored plates in illustrating syphilis. His differential diagnosis is very complete and the colored plates illustrating the common types of infectious exanthemata are very pretty. This is followed by Expectoration, and under this description the semeiology of the sputum is nicely arranged.

The next is Disorders of the Eyes which is discussed in a very systematic and clear manner. This is followed by Fainting, Fever, Frequent Pulse, Genital Ulcerations, in which he summarizes the different types in a very helpful manner. He then discusses Glandular Enlargements, Glycosuria, Headache, Hematemesis, Hematuria. In these conditions he has also splendidly outlined and described them by charts.

He then discusses Hemiplegia, Hemoptysis, then Hiccough followed by High Blood-Pressure. This is nicely presented and is helpful.

This subject is followed by Pain in the Left Hypochondrium, Pain in the Right Hypochondrium, Pain in the Left Iliac Fossa and Pain in the Right Iliac Fossa. This is very cleverly presented and is illustrated with many useful illustrations and diagrams.

The next subject treated is Insomnia, then Itching, Jaundice, Joint Pains, Loss of Weight, Low Blood-Pressure, Pain in the Lower Extremities. These are well presented. Lumbar Pain is next followed by Swellings in the Neck, Nervousness, Obesity, Oliguria, Pain in the Side, Plethora, Polyuria, Precordial Pain, Morbid Sleep, Slow Pulse, Sore Throat, Tinnitus Aurium, Diagnostic Features Relating to the Tongue, Tremor, Pain in the Upper Extremities, Vertigo, Vomiting, Index of the Principal Clinical Signs.

Much valuable information and diagnostic help will be obtained by frequent use of this volume. The Index of the Principal Clinical Signs is a very useful and practical addition to this type of work.

The reviewer recommends these two volumes to any physician and assures him that they will be of valuable assistance in his work. F. F. D. R.

GENERAL MEDICINE of The Practical Medicine Series 1922, Volume I. Chicago: The Year Book Publishers. Price $3.00.

Barring a number of typographical errors I find it a splendid résumé and digest of last year's literature published on internal medicine. While it is of special value to the general practitioner, it is also of value to the internist and to medical men who are giving particular attention to special departments of internal medicine. The various editors are to be congratulated in presenting in such a small compass so much of the world literature that is up-to-date on internal medicine. G. E. H.

SYMPTOMS OF VISCERAL DISEASE, SECOND EDITION, by Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P. Published by C. V. Mosby Company, St. Louis, Mo.

The second edition of this work has corrected many errors of commission and omission. It will be difficult for the author to persuade the medical profession to conform to his recommended nomenclature. Head's classification still continues as the foundation for study of pain and explanation of reflexes. On page 147 the studied effort to explain the reflex pain in irritation of the appendix will not be generally accepted. In some places the wording of the subject matter is not smooth and could be improved upon. I feel, however, that the book is worth reading but requires much study in order to catch the author's viewpoint. A. C. M.

THE MEDICAL CLINICS OF NORTH AMERICA. July, 1922. St. Louis Number. Vol. 6, No. 1. Philadelphia and London: W. B. Saunders Company.

This volume of the Clinics contains a smaller number of articles than usual, but these maintain the usual standard of value and interest. Titles and authors follow: Endocrine Adiposity, by Dr. W. Engelbach; Pubertas Præcox, by Dr. J. L. Tierney; Pernicious Anemia, by Dr. L. H. Hempelmann; The Relationship of Syphilis to the Appearance of Symptoms of Disorder of the Central Nervous System, by Dr. F. M. Barnes; Neurologic Cases, by Dr. S. I. Schwab; Dyspepsia, by Dr. H. W. Soper; Lactic Acid Milk (Whole Buttermilk) in Infant Feeding, by Dr. B. S. Veeder; Chronic Digestive Insufficiency (Celiac Disease), by Dr. W. McK. Marriott; Erythremia (Acrodynia) in Infants, by Dr. J. Zahorsky; Acute Intermittent Cardiac Decompensation, by Dr. E. S. Smith; Tumors of the Mediastinum, by Dr. L. Sale; Bronchopulmonary Lithiasis, Mediastinal Tumor, by Dr. J. C. Lyter; Bacteriologic Clinic —Diagnostic Methods, by Dr. R. A. Kinsella. A. A. E.

TEXTBOOK OF PEDIATRICS, edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwick, B.S., M.D., Professor of Pediatrics, University of Minnesota Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P., Duluth, Minnesota. First edition in English; 262 illustrations. Philadelphia and London: J. B. Lippincott Company, 1922. Price $8.50.

The review of a book of this kind by one who has had the privilege and the pleasure of dealing with children for more than thirty-three years is a pleasure and a source of recreation.

The writer introduces you to the peculiar anatomical and physiological differences between the adult and the newborn child, calling attention to the variance in blood pressure, circulation, respiration and nutrition, and carries you along with tables and illustrations to care for and produce a healthy, normal and happy child.

In the chapter on Symptomatology and Technic of Examination the author carries you through the fertile field of the child's history from its conception through its intra-uterine life, its birth, its development, its feeding, its environment and its general welfare.

Having taken note of these as gathered from the fond mother you are then ready to verify them by your observation of the child under study. The chapter on Prophylaxis and Therapy is a masterpiece in child care, for we are now living in times that require the physician to teach his clientele the ways of prevention, for it is believed that many children are taken by the "grim reaper" because some one has blundered, some one has been careless and some one has cost a little life. Let the author impress you with his statements and facts gathered from his own as well as from the experience of the men of our profession who have worked along these lines over a period of many years.

The diseases of the newborn child are many and varied, and the author in this chapter is interesting and instructive and entertains you while you read and gives you heaps of information to apply to the little fellow who has been placed in your hands for you to say whether he shall stay here or go "yonder." A careful reading or study of this important chapter added to your storehouse of knowledge will do much to help you in the care and treatment of the little ones.

When you turn over to the chapter on Blood and Blood-Forming Organs, you are at once impressed by the clearness and the earnestness of the author in setting forth the necessity of close observation of the child. As you turn on through, you come to the chapter on Disease of the Digestive System, and you will find just the formula for preparing the food for the baby that has been deprived of its mother's feeding, and bring to it that comfort and peace that makes the care of the baby a pleasure.

The author, all through the book, has endeavored to produce a pleasing and helpful work for the busy practitioner, and all who deal with the subjects of his work should have this book. J. B. F. W.

ALBERT ABRAMS, A.M., M.D., LL.D., F.R.M.S.

Dr. Albert Abrams, of San Francisco, is the latest rocket to blaze a somewhat polychromatic course across the firmament of pseudo-medicine. The stick will fall, anon. In the field of diagnosis Dr. Abrams claims to have evolved a system of abdominal percussion, practiced in connection with certain electrical apparatus he has had made, from which he derives what he is pleased to term the "Electronic Reactions of Abrams" (abbreviated ERA). By means of this system it is claimed that Abrams "can diagnose the sex, race and

disease" of a patient he has never seen. All that he needs is a sample of blood from the individual. A few drops of blood, from a person who must be facing west but who may be a thousand miles or more away, are put on apiece of paper and the paper is placed in what Abrams calls his "Dynamizer." This is connected with his "Rheostatic Dynamizer," from which, in turn, wires go to the "Vibratory Rate Rheostat" that is connected with the "Measuring Rheostat"! From the "Measuring Rheostat" comes a wire at the end of which is an electrode which is pressed to the forehead of a healthy individual (the "subject") whose abdomen is being percussed. The "subject" must face west, also.

The whole arrangement is reminiscent of one of Goldberg's inimitable cartoons, depicting a fearful and wonderful device for waking up in the morning or committing suicide or something equally interesting. The nub of the whole matter is, however, that the alleged diagnosis is made by mapping out various areas of resonance and dulness in the "subject" who is being percussed. Dr. Abrams claims to be able to tell by this means whether the individual whose blood is being "tested" is suffering from syphilis, sarcoma, carcinoma, typhoid fever, malaria, gonorrhea or tuberculosis and, if so suffering, where the diseased area is located! He can also diagnose pregnancy by the same method!!

So skilful has Dr. Abrams become in his diagnoses that he can substitute for the drop of blood, the *autograph* of an individual, living or dead, and subject it to his tests and declare whether or not the individual is or was a sufferer from syphilis, etc. He has, in fact, reported the results of subjecting the autograph of Samuel Pepys to his "electronic reactions" and finding that this famous diarist suffered from congenital syphilis; of finding the same for Henry Wadsworth Longfellow and also for Edgar Allen Poe and, in the case of the latter, adding that he also got the "reaction of dipsomania." The autograph (written in 1775) of that stern old moralist, Dr. Samuel Johnson, gave the "reaction" for acquired syphilis and tuberculosis.

Nor is this all. Dr. Abrams now announces that by his "electronic reactions" he can determine the religion of an individual and, in the latest issue (September, 1922) of his house-organ, *Physico-Clinical Medicine*, he maps out the areas of dulness for (1) Catholic, (2) Methodist, (3) Seventh Day Adventists, (4) Theosophist, (5) Protestant, (6) Jew. Just why the area of dulness of a "Methodist" should be in the left lower quadrant of the abdomen while the area of dulness of a "Protestant" is in the right lower quadrant, is not quite clear. Neither is it explained why the Jew should have such a much larger area of dulness than the Christian. These points will, doubtless, be cleared up later.

In the field of treatment Albert Abrams claims equal marvels. He has discovered that all drugs that are specific in the treatment of disease have a definite vibration rate. He has, therefore, devised another instrument which he calls the "Oscilloclast." This is capable, so it is claimed, of producing vibrations of various rapidities. Instead of using a drug, one starts the "Oscilloclast" going, moves the indicator to the number corresponding to the vibration rate of the indicated drug and applies the instrument to the sufferer, who then gets, it is alleged, the therapeutic action of the drug in question. The "Oscilloclast" is not for sale; it can be leased, to those who are willing to pay the price and sign a contract that they will not open it!

It has been suggested that the American Medical Association conduct a scientific investigation of Abrams' claims. As has been stated elsewhere, Abrams was given an opportunity a few years ago to subject his theories to scientific test—and he rejected the opportunity. To make such an investigation to-day would be to dignify that which has become preposterous on its face. Nor is it conceivable that an adverse report from a group of scientific men would serve any good purpose. Certainly it would make no difference to the deluded, ignorant or itching palms in the profession who are "enjoying incomes of from $1,000 to $2,000 a week" from the use of the Abrams paraphernalia; while Abrams' own retort would doubtless be that the diagnostic methods of scientific medicine are too crude to be used to check his ultra-refined "electronic reactions." In fact, in warning his disciples not to submit to blood tests, Abrams declared recently (September, 1922) that "the ERA cannot fully accord with the conventional diagnoses." The American Medical Association will take up Abrams' fantastic vagaries for serious investigation when the American Astronomical Society appoints a committee to determine the truth or falsity of the theory of Voliva, head of the Zionites, that the earth is flat.—*From the A. M. A.*

ABRAMS' DIVINING ROD: THE APOTHEOSIS OF BUNCOMBE

"Oil Locating Machine Aim of Dr. Abrams. Mysterious Device To Be Exhibited Soon." Thus a Los Angeles paper for February 12th heads, in large and black type, an article detailing the alleged claim of Albert Abrams[11] of San Francisco, that he has about perfected a machine that will locate the subterranean position of oil. The claim may not be as new as it seems. In his book "New Concepts in Diagnosis and Treatment," published six years ago, Abrams declared that the divining rod is not a superstition and does not belong to occultism "but it entitled to consideration as a scientific fact." In the same book Abrams declared that with his instrument, the "Sphygmobiometer," "it is now possible to demonstrate the wave-metric index of water, oil and minerals." He continues further:

Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality. By aid of the apparatus in question, one may even venture further and ascertain quantity and depth.

Abrams was vague—as usual—regarding the details of this wonder and to the paragraph just quoted he appended the footnote: "It is impossible to describe the author's methods. They demand personal demonstration. * * *." But why should one express astonishment regarding this particular claim of Abrams? To the man who can tell from the autograph of old Samuel Pepys that the famous diarist suffered from congenital syphilis, surely the locating oil and mineral deposits should be a mere bagatelle. To the man who, from a drop of dried blood, can tell whether the owner of the sanguineous fluid is a Scotch Presbyterian, a Hard-shell Baptist, a Seventh Day Adventist, a Knight of Columbus or a member of the B'nai B'rith, the development of a divining rod is mere child's play. Seriously, however, the disciples of Abrams will needs be more careful in the exploitation of an "oil locating" machine than in their present stunts of diagnosis and treatment of human ailments. Abrams' followers are diagnosing syphilis, cancer tuberculosis and many other serious diseases in persons not suffering from those diseases and they "get away with it." When the medical profession in the interest of the public protests the findings, the reply is: Your methods of diagnosis are so crude and insensitive that you are unable

(Concluded on page xiv)

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ABRAMS' DIVINING ROD

(Concluded from page 500)

to find what we have found. This alibi will not work in the less dangerous field of locating oil and minerals. Because of the public's ignorance of the human body and its processes it permits the grossest frauds to be perpetrated when done in the name of the healing art; it resents most savagely, however, chicanery and humbug when property rights are involved. One thing must be said for the Abrams cult: Whatever skepticism we may have of Abrams' accomplishments, he must be given credit for the discovery of the modern Philosopher's Stone, with which his followers transform the dross of credulity and hopefulness into shining shekels of gold.—*Jour. A. M. A.*, March 3, 1923.

11. A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.

WHAT WE GET WHEN WE SMOKE

One of the substances abundantly present in tobacco smoke is carbon monoxid, well known as the lethal agent of illuminating gas and of the exhaust gas of motors, which has had so many victims in recent years. Carbon monoxid is not directly poisonous, but displaces oxygen from hemoglobin, for the red cells have 225 times as great an affinity for this gas as for oxygen. Baumberger[6] has found that tobacco smoke may have from 7.2 to 25 parts of carbon monoxid in 10,000 parts of air, a concentration which Henderson found capable of causing serious symptoms if inhaled for more than an hour. But persons never take in undiluted smoke—the heartiest cigaret fiends and the most resolute pipe smokers always take many breaths of fersh air between puffs. It is estimated that if a person should smoke continuously for one hour, inhaling the smoke five times a minute, there might occur as high as 22 per cent saturation of the hemoglobin by carbon monoxid, a concentration sufficient to produce headache and perhaps an oxygen shortage during activity; but this figure is undoubtedly far above what smokers do actually accomplish. Perhaps 10 per cent is more nearly the maximum reached in smoking, a figure that has not been found ordinarily to produce symptoms.

Formerly the statement was current that the chief toxic material in tobacco smoke is pyridin, derived by decomposition of nicotin; but later studies agree in indicating that the nicotin is the chief active agent, tobacco smoke exerting much the same physiologic effects as nicotin in corresponding concentrations.[7] By direct analysis, Baumberger found that cigaret smoke contains between 14 and 33 per cent of the nicotin present in the tobacco smoked. Cigarets weigh about 1 gm. apiece, and about 80 per cent of the tobacco is smoked, so that the nicotin in the puffed smoke amounts to about 5 mg. for each cigaret. Of this, about 67 per cent is absorbed if the smoke is merely taken into the mouth, but 88 per cent is absorbed if the smoke is inhaled into the lungs. How much of this reaches the blood depends chiefly on how much is lost in saliva, the drooling of the novitiate being an important protective measure, since from 3 to 5 mg. of nicotin dissolved in water, taken within half an hour, may cause severe symptoms in nonsmokers, whereas habitual smokers can endure twice as much.

These figures show that an unventilated room 10 feet square and ten feet high, occupied by ten men all smoking cigarets to the best of their ability for an

(Concluded on page xvi)

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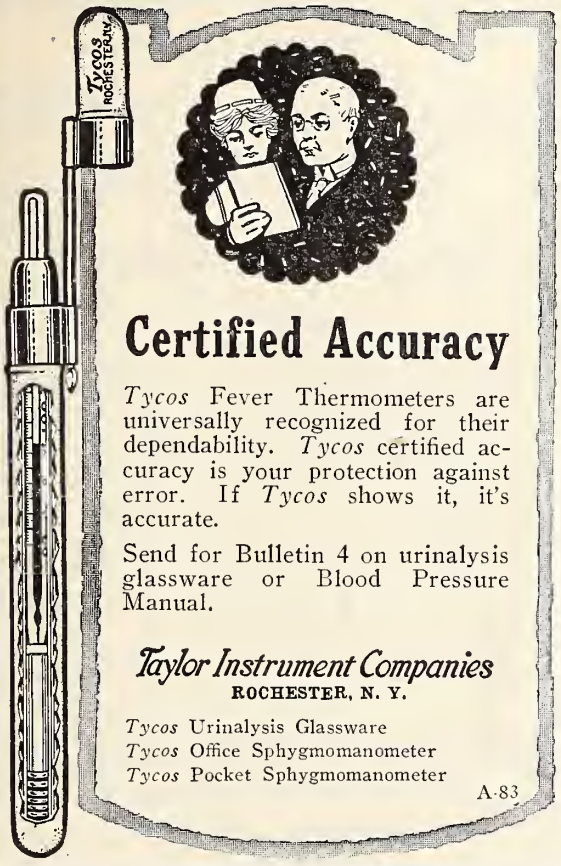
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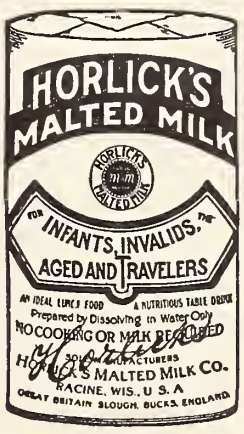
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WHAT WE GET WHEN WE SMOKE

(Concluded from page xiv)

hour, would come to have an air containing about two parts of carbon monoxid and enough nicotin to furnish 2.6 mg. an hour to the person compelled to breathe it. While these are not large amounts in figures, it is certain that any nonsmokers, and many smokers, in such an environment would have a headache, which is ascribable to the increased intracranial pressure that is produced by both the nicotin and the decreased oxygen in the blood. If our hardened cigaret smoker were to puff away steadily for an hour he might absorb as much as 36 mg. of nicotin if he inhaled, and 27.5 if he only puffed. These are amounts that would undoubtedly produce marked effects even on the habituated, but there is at least the consolation that the lethal dose is 500 mg. taken at one time. However, the smoker gets much besides carbon monoxid and nicotin, for the solids of cigaret smoke weigh about 10 per cent of the tobacco burned, or about 80 mg. for each cigaret, and all the things it may contain besides the aforementioned are not known; but the experimental evidence indicates that nicotin and carbon monoxid account for most if not all the observed effects.

It is to be considered that these experiments were carried out with cigarets, for the observations of Lee indicate that tobacco burned in cigarets yields much less nicotin, and presumably less carbon monoxid, in the smoke than when burned in cigars or pipes. For example, a Manila cigar and a cigaret of Virginia tobacco were so burned that the same amount of tobacco was consumed in equal time, and the effect of the products of the combustion determined; it was found that although the cigaret tobacco used contained nearly twice as much nicotin as the cigar tobacco, the smoke of the latter was twice as toxic as the cigaret smoke. The explanation for this is that during the slow combustion of a cigar, as in ordinary smoking, immediately behind the point of combustion is an area in which the water and other volatile substances condense; during the act of smoking, the hot gases pass through this moist area and volatilize the more volatile principles of the tobacco, of which nicotin is one. Therefore the smaller the moist, hot area behind the point of combustion, and the more rapid and complete the combustion, the less likely is the smoke to contain volatile toxic bodies; hence a cigaret or a slender cigar will yield fewer of these products than a thick cigar, and many smokers can testify that a thick, "fat" cigar has much more effect than a long, slender cigar of similar tobacco. The unpleasant effects that the unaccustomed smoker experiences on relighting a half-finished cigar or pipe are explained on the same basis.—*Jour. A. M. A.*, March 3, 1922.

6. Baumberger, J. P.: J. Pharmacol. & Exper. Therap. **21**: 23 (Feb.) 1923.
7. Lee, W. E.: Quart. J. Physiol. **1**: 335, 1908. Von Leeuwen, W. S.: Arch. f. exper. Path. u. Pharmakol. **84**: 283, 1918.

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ADDRESS

SPECIALISM AND COOPERATION*

GEORGE E. DE SCHWEINITZ, M.D.

PHILADELPHIA, PA.

Expressing my high appreciation of the courtesy extended in the receipt of an invitation to address the members of the Medical Society of the State of Delaware, an invitation which I have gladly accepted, I am fully aware that although some of those present are interested in ophthalmology, the majority have tilled the wider fields of general medicine and surgery. Therefore it becomes evident that the substance of this address should endeavor to concern itself with matters which are of value both to the general practitioner and to the physician who is concerned with special lines of practice.

Everywhere in the world progress is brought about by increasing specialization and coöperation. Almost a quarter of a century ago, a very distinguished London surgeon wrote somewhat as follows: "Specialism there must be. In the evolution of thought, in the increasing differentiation of social and economic functions, and in the consequent subdivision of labor, the growth of specialism is inevitable and, indeed, necessary. The increase of knowledge, the elaboration of the means and methods of investigation, the more minute *differentia* of disease and of diagnosis, the complexity and potency for good or for evil, of modern therapeutics, whether pharmaceutical or surgical, must eventuate in specialism of knowledge and specialism of practice. This tendency is observable in the whole world of thought and opinion—in philosophy as well as in physiology, in politics and economics, in architecture and in engineering, no less than in medicine and surgery. But it behooves every enlightened member of the medical profession to take care that our specialization shall be the legitimate and reasoned outcome of the growth of knowledge."

This is a judicial and fair statement of the *raison d'etre* of specialism in our profession, but granting this, we must not forget, as has been previously stated, that if progress is to exist, increasing specialization must go hand in hand with coöperation. In other words, it behooves us, whether we be general or special practitioners, in the study of our cases to strive for integration of what has been left imperfect.

At the present time, in order to secure cooperation in medical and surgical work, group practice and group clinics have come into existence and are spreading widely. Certain objections have arisen with respect to this technic, although everyone will admit that advantages also arise, provided the kind of coöperative work interpreted in group practice is properly performed. It is not the purpose of the present paper to discuss this matter, nor to recite the arguments for and against it, but it is the purpose of the essay to point out, what of course we all know, that for years physicians, when the interests of their patients demanded it, have turned to group practice in the sense that from the laboratory standpoint, from the special standpoint, and from the specialized general standpoint, coöperation has been secured by calling on expert advice in cases of difficult diagnosis.

In my early medical career two incidents made a lasting impression on me. Called in the night to the bedside of a child of three, brought into the Children's Hospital, where I was serving my first interneship, I found the little patient prostrated, cyanotic, with a high fever and marked respiratory dyspnea. I made what I believed to be a thorough examination, but failed to find a satisfactory cause of the condition. Sending for my chief, he listened to my report, and then without a word, thrust his finger into the child's throat and detected far up in the posterior pharynx a bulging spot indicating a retropharyngeal abscess. It was promptly opened, and all the symptoms speedily subsided. Turning to me with a kindly smile, he said: "Doctors fail not so much because they don't know, but because they don't examine."

While serving on the late Dr. Weir Mitchell's staff, at a somewhat later period in my career,

*Address delivered before the Medical Society of Delaware, Dover, October 10, 1922.

I listened to his exceedingly accurate cross-examination of a patient with obscure symptoms; watched him as he carefully reviewed the history, the clinical reports and the laboratory findings. Anxiously the sick man leaned forward, waiting for the verdict. "I know," said Dr. Mitchell, "exactly what is the matter with you. Alone I cannot cure you, but I know the man, or the men, with whose help I can."

The very foundation of successful therapeutic effort resides in painstaking clinical examination, history record, exact search and coöperation, not alone with the laboratory and its methods, but with "the man who knows," with the man who is especially trained to be the foe of the cause from which the morbid state is evolved. More often it requires more than one man "who knows" to reach a successful outcome. It requires work, coöperative work, each practitioner furnishing his quota until the page is complete. The time has long passed when it is possible for any one man to be practically familiar with all the problems which must be solved in the management of a difficult case, and I have never in a rather long career known any instance where properly secured help, properly given, has failed to create an additional bond of confidence between the patient and his physician.

Although for more than a century physicians have observed a relation between areas of local sepsis and somatic as well as organ-maladies, notably those in the teeth, the so-called doctrine of focal infections, in this country at least, did not establish its firm hold on the profession until after the delivery of the Lane Lectures by Dr. Frank Billings about twenty years ago.

This doctrine has become almost a trite subject, not to say a household topic, and yet certain references cannot be avoided, even though they sound like, or perhaps are, platitudes.

Studies and observations in this respect have been rich in the importance of their results, and have demonstrated that the elimination of areas of focal sepsis is often followed by well-nigh startling recoveries in many conditions previously poorly understood and badly managed.

Certain facts have been established, and one of great importance is that the obligations of modern practice demand that an inflammation or lesion, whether, for example, it resides in a joint, in a heart valve, in a tissue of the eye, in the muscles, or in the glomeruli of the kidney, shall be studied, not merely in relation to its local manifestations, or, indeed, with respect to constitutional difficulties, but with an endeavor to ascertain the origin of the toxemia of which it may be the interpretation. In other words, the local lesion, in heart, joint, eye, kidney or elsewhere, is not an independent disease, but a complication.

In practical work we are not greatly concerned whether, given a focal infection, the infecting materials are the bacteria themselves, or their products such as toxins or endotoxins; nor whether the focus of infection is merely the port of entrance of bacteria, or whether it is an area with conditions favorable for the bacterial parasites to acquire properties which give them a wide range of affinities for various structures. We may be content to realize that the bacterial elements reach and locate in certain tissues, either because they have acquired a special affinity for them and a good soil for growth, or because the resistance of the parts is reduced by some other agency, and the localization of the germs is favored.

The agency which reduces resistance in these circumstances, there is reason to believe, is an "injury" which puts out of operation local protective forces, and this injury may be chemical, physical, or depend upon a chronic infection. The subject of a remnant of gonorrhea in the posterior urethra (it may be years after its incidence) begets an arthritis after a prolonged exercise, or an iritis after excessive reading. This is an example of a physical injury: A person with chronic syphilis, or other chronic infection, may acquire, let us say, a uveitis, may resist the usual remedies, but yield to them after the elimination of an abscessed tooth, or infected tonsils. This is an example of the coöperation of a syphilitic and secondary (pyogenic) infection. It is quite possible that a similar coöperation between gout, diabetes and hypothyroidism and pyogenic infection exists; the metabolic products furnish a chemical injury which reduces the resistance in an area against which the bacteria from a focal area launch a successful attack.

Finally, it must not be forgotten that often more than one focus of infection is present, i. e., more than one depot is stocked with the materials of bacterial warfare, and hence the elimination of one septic area is not sufficient.

Because the study of focal infections has markedly improved our diagnostic methods and therapeutic measures, it is perhaps not unnatural that at times there have developed over-enthusiasm and optimism. There is no doubt, if I may quote from a previous paper, that many teeth, for instance, have been needlessly sacrificed, but this is equally true of many appendices, many foreskins, many tonsils—the list is a long one. But

he is just as wrong who disdainfully disregards examinations along these lines because, forsooth, he chooses to regard the whole matter as "a fad," as he is who suspects every tooth, for example, and extracts too many, or condemns all tonsils and "cuts them out" too frequently, or in the presence of each optic neuritis accuses the ethmoid or sphenoid without adequate investigations, and indulges in ill-considered explorations, to the detriment of the neighboring meninges, which are easily insulted. Evidently there is a safe and sound pathway which opens up as the result of conscientious investigation, and neither unreasoning conservation nor injudicious enthusiasm of ill-advised activity lead to it.

Passing from these generalities, I submit a few examples of the value of what I have ventured to call specialism and coöperation.

A married woman, aged 35, three months after a severe influenza, developed a right-sided, diffuse, but relapsing keratitis, the lesions of which did not penetrate further than just below Bowman's membrane. The ophthalmologist consulted made the usual examinations, and all were negative, serological and t.b. tests included, except that infected tonsils were found, and several suspicious teeth. Tonsils and teeth were removed, and proper local treatment instituted. But relapses continued during the following year, and she sought additional advice.

The patient was under-weight, nervous, and naturally depressed. An internist was consulted, who confirmed the previously reported examinations, but also found some intestinal stasis and a "poor digestion." Struck by the patient's statement that she was always better if she could rest and be kept from the worry of ordinary life activities, her family physician in her own far-off home was consulted by letter, and he reported that in years gone by an ordinary rest-cure had been of great benefit to her. This, on request, was instituted, the intestinal stasis corrected, also the diet. In six weeks the patient had gained sixteen pounds; the eye was well.

Now the course of events would seem to be this: A keratitis due to an infection, probably from tonsil or tooth, or both, the local resistance being reduced by a general asthenia, recrudescent as the result of influenza; elimination of the focal infections, dental and tonsillar, and the local ocular treatment necessary, but not sufficient; when the asthenia yielded to the rest-cure, and the restoration of normal intestinal functions (also a source of infection), the arch was completed, and the keystone of the arch was the general practitioner. Specialist and practitioner coöperated, each needing the other, and in six weeks the job was completed, which for a year had remained imperfect.

A man, aged 35, free from syphilis, tuberculosis, cardiovascular and renal disease, and without evidence of intestinal disturbance, but who at twelve years of age had double mastoiditis, and since then has been quite deaf, and has had a more or less constant otorrhea, had between May, 1918, and February, 1922, five attacks of iridocyclitis, two in the right eye and three in the left. Three of the attacks were severe, one mild, antedating by a month the fifth, or exceedingly active relapse. He also had vague rheumatic pains, chiefly in the finger joints.

During the third attack (October, 1919) he came under observation, and the usual treatment locally was instituted, together with aspirin internally, elimination by cabinet sweats, and later iodids, and an autogenous vaccine cultivated from the pus from the ear. The teeth had been put in order, and there was a difference of opinion as to the tonsils, one otolaryngologist demanding their removal and another maintaining their innocence. Appendectomy (pus found) after this October, 1919, attack had entirely subsided. Eye quiescent until the following April (1921), when a sharp relapse (left eye) occurred. The treatment before described was instituted, but without the previous happy result; hence, after vigorous insistence, tonsils were removed, and found distinctly, but not grossly, infected. Prompt subsidence, first of the finger-rheumatism, and then of the iridocyclitis. Freedom from all trouble for seven months, then a mild attack (January, 1921) which lessened under same treatment (aspirin, sweats, but no vaccine) and the usual local measures, but which, in spite of this, one month later, blossomed out into a violent relapse (February, 1922). A necrotic spot in the jaw was found and eliminated, and after conference with the family physician, the patient was sent to one of the well-known Hot Springs, and underwent a partial cure (baths and diet), with very prompt entire subsidence of the iridocyclitis. Since then, more than half a year ago, there has been no relapse. Whether one shall follow remains to be seen, as once before there was an interval of seven months between attacks.

This case illustrates several points of interest: First, a number of areas of focal infection; suppurating otitis media, infected appendix, dental sepsis and bad tonsils, possibly but not certainly, a moderate intestinal sepsis or indigestion.

Second: Two interpretations of these focal infections—moderate but distinct finger-rheumatism (digital arthritic pains) and relapsing iridocyclitis.

Third: A persisting otorrhea (still existent) which, not naturally, was at first mainly, if not entirely, accused as the chief area of offence, but which subsequent events indicate was least of all concerned with the etiological relations.

Fourth: The well-known, but often disregarded, fact that tonsils, apparently healthy on superficial examination, may be infected in the deeper layers, and with their removal entire disappearance of the arthritic pain, and temporary quiescence of the iritis ensues.

Fifth: The fact, also well known, that elimination (diaphoresis) by cabinet sweats, is not, at least not always, as effectual as a Hot Springs cure, probably because in the latter general supervision is more easily and effectually possible, including diet regulation. Evidently in this case the coöperation of dental, otolaryngologic, and even general surgical treatment was required, but again a careful association of general medical study was in ultimate result the needed ally. The effect of a multiplicity of focal areas is demonstrated.

There is a well-known ocular disease, called fugacious periodic episcleritis, originally named years ago by Jonathan Hutchinson, "hot eye," and in this country "vasomotor dilatation of the vessels," whose objective symptoms are areas of redness, congestion and episcleral thickening, whose character is relapsing, whose association is usually with gout and chronic rheumatism, and whose subjective manifestations are stinging, burning and itching, often intense.

But there is also a condition unattended with local changes in the episclera and conjunctiva, but with pronounced local discomfort, as before named—itching, burning and stinging, often especially located along the lid margins, the patients generally in apparently perfect health. Now such a manifestation is not an uncommon interpretation of eye-strain due to refractive error, or muscle imbalance, and hence their correction is an evident indication, and is, as it should be, put into practice. Surely there is no ophthalmologist in the room who has not encountered these cases, and equally surely none who has not been disappointed in that properly selected glasses utterly fail to relieve the symptoms. Many case histories could be detailed from the practice of any one of us, but it is unnecessary, as the type is sufficient as it has been described. This condition (exclusive of the refractive type) is often the direct result of what is loosely, or inaccurately, called the "uric acid diathesis" (lithemia), and disappears with surprising promptness when a suitable dietetic and medicinal regimen is ordered. The symptoms are analogous to the tingling in the feet and elsewhere noted in gouty subjects, so neatly described by Strabo many years ago, as the "lisping of the gout."

That certain relapsing types of episcleritis and conjuctivitis (nonbacterial) are associated with the ingestion of certain foodstuffs seems demonstrated, or at least apparently so, and with sufficient exactness to require, when other measures fail to bring relief, protein food tests, and should the skin react, such foods must be eliminated from the diet. Indeed, in one patient recently under observation (although other factors were not wanting), the marked skin reaction to wheat, followed by its exclusion from the diet list, resulted in rather surprising disappearance of a curious headache, associated with photopsies and conjugate deviation of the eyes to the left, helped but not cured by glasses. Such cases as these and the preceding ones are mentioned as fair examples of the need of general and special examinations, even where the local or other manifestations would seem to indicate eye-strain as the etiologic factor—other examples, in short, of what has been called coöperative work.

The mention of photopsies naturally leads to a reference to those types of hemicrania where the prodromes are ocular, to wit, scintillations, scintillating scotomas, visual hallucinations and hemianopsias, in short, migrains. Often, and indeed usually, greatly relieved by the correction of refractive errors and muscle defects, they rarely, if ever, are cured by treatment of the eye alone, and the search for other etiologic factors must be insistent—the gastro-intestinal tract, the common ones of focal infection, disturbed metabolism, as in gout, etc. This is so well known that the mention of it would be useless were it not for the fact that, as the forerunners are so often visual, corrections of visual defects, necessary as they are, only too frequently check a wider and more general search.

We must remember, also, that there are cases of scintillating scotomas and temporary hemianopsia which are not followed by the usual headache, or hemicrania, but by great mental depression. A case in evidence is this: A man, aged 57, too fat, with some peripheral arterial sclerosis and rather high systolic pressure, had for four years attacks of scintillating scotomas, followed by temporary half vision. After the

first severe attack, there was freedom for two years, then for intervals of six months, then attacks came with greater frequency, once in two months, and finally once in every two weeks; always afterwards there was great mental depression and insomnia. Curiously enough, all treatment for years had been centered on the eye, and no search made for other causes. X-rays showed dental sepsis, and the evident indications of its elimination. The reduction of weight by dietetic measures, as well as the restoration of elevated systolic pressure to a reasonable standard were suggested and followed.

Finally, we should remember that there is a class of hemicrania cases, as well as a class of visual disturbances, such as has been described, where there seems little doubt that disturbances of the pituitary body functions must be accused, and surprisingly good results follow proper organotherapy. All such cases are excellent examples of the need that specialism should be linked with coöperative work from the diagnostic and therapeutic standpoints.

At this point a slight digression from the line of thought is permissible, or perhaps not a digression, viz., the care which must be exercised in the use of diagnostic injections of tuberculin. Two instances will suffice: A young man, the subject of that rather mysterious disease known as recurring retinal hemorrhages of adolescense, which, as you know, is probably in many instances dependent upon tuberculous toxins acting on retinal vessels, usually the veins, but which has also been attributed to faults in blood coagulability, to focal infections, and intestinal sepsis, and (they never escape) to disturbances of the endocrine glands, received a diagnostic injection (Mulford O T). It was followed by the most surprising local reaction (also a less severe general reaction), and unhappily, by an alarming explosion (there is no other word) of fresh intra-ocular hemorrhages.

A young woman, with a small group of choroidal tubercles along the superior temporal vessels of the right eye, received a similar injection, followed in the next forty-eight hours by an eruption of tubercles and small hemorrhages over a large area of the fundus. Fortunately, in both instances, long drawn out treatment resulted in a subsidence, in fact, a disappearance, of the lesions. In both cases the mistake was that a full diagnostic dose was administered in place of a gradual approach, short of unpleasant reaction. The warning which these cases reveal is evident.

Thus far the endeavor has been to illustrate the advantage of coöperation along the lines of examination which shall lead to satisfactory exhibition of therapeutic measures, also therapeutic caution. But one other point may be noted and illustrated in the following case history.

A young married woman, always in apparently good health, and in very pleasant surroundings, ten days prior to examination became conscious of sudden cloudiness of vision of the left eye, preceded by pain. Nothing definite was found by the attending ophthalmologist except a slight edema of the disc head. Serological tests, examinations for focal infection (save one abscessed tooth, which was removed), investigation of the paranasal sinuses, etc., were negative. Careful search by an accomplished internist revealed an unusually low blood-pressure, alteration of the breath sounds and narrowing of resonance above the clavicle, suggesting a t.b. influence, and x-ray examination of the chest gave some confirmatory, although not definite, evidence. Therefore the only "lead" appeared to be (it was a possibility, at least) incipient tuberculosis. When, however, a very searching history was taken, it was found, previously unnoted, or if noted deemed of no special importance, that the patient just prior to the advent of the ocular difficulty, and just at the conclusion of the menstrual epoch, had spent a day in vigorous work devoted to house-cleaning. Somewhat overheated, she had been exposed, or rather had purposely exposed herself to the cool of the evening, and was conscious of chilliness. Now it is a fact that a form of retrobulbar neuritis (which this appeared to be, although not typically) is sometimes analogous to facial (Bell's) palsy, caused by exposure, that is, a palsy exfrigore. Hence, the t.b. lead was abandoned, and an eliminative treatment instituted—vigorous diaphoresis, temple counter-irritation, diuresis and full doses of alteratives. In one month a cure was established.

This is a long road to reach a conclusion, but it seems worth traveling. In the absence of a searching clinical history, the point would have been missed and the wrong lead followed. How necessary it is, therefore, that our medical students shall be familiar in the best sense of that term with history-taking, and "wise it is," as Weir Mitchell once said, "that every fact in such a history, however minor its importance, should be regarded, as it may become the key to the whole situation."

In concluding, permit a few additional statements. Should the ophthalmologist, confronted with an iridocyclitis, for example, and uncer-

tain as to its etiology, refer the patient to another for examination, special or general, it is incumbent upon him, if possible, as it usually is, to indicate the "lead," and thus avoid needless examination and equally needless expense. Should the first concentration on this suggested "lead" not bring satisfactory results, others must be followed. Elaboration of this thought is not necessary.

Should the general practitioner refer a patient to an ophthalmologist, for instance, he naturally and properly indicates the problem in which he wishes help, that is, are there ocular conditions to account for headache, nausea, gastric disorders, insomnia, excessive nervousness, etc., or symptoms suggesting increased intracranial pressure, or are there ocular indications of cardiovascular disease, renal affections, metabolic disturbances, etc.? But should the ophthalmologist in his routine work discover, let us say, an eye-ground lesion indicating a somatic malady, although the reference was for the correction of refractive error, and report the same, it is surely incumbent on the practitioner to investigate, and not to be offended. The reverse of this relationship is of course equally true. Each practitioner, or so-called specialist, must approach the problem in a spirit of coöperation, with the good of the patient as his paramount duty. If this rule is followed, neither will lose the respect of the other, and both will enhance the confidence of the patient. Coöperative medical work must be played fairly, and the success of it depends upon working "in perfect sympathy and uncontending equity."

ORIGINAL ARTICLES

SYMPOSIUM ON GOITER

Concluded

WHAT TYPES OF GOITER SHOULD RECEIVE MEDICAL TREATMENT?*

DONALD GUTHRIE, M.D.

SAYRE, PA.

There is to-day much unnecessary surgery employed in the treatment of goiter. Many patients suffering from constitutional diseases but having at the same time non-toxic goiter are subjected to ill-advised operations after incomplete examinations and hasty diagnoses. It is against this practice that the writer wishes to object in the strongest terms.

While it is not within the scope of this paper to discuss the differential diagnosis of toxic goiter, may I urge that its symptomatology be emphasized so that the men in general practice may have a better understanding of it, for it is to them that the patient first comes for relief.

Anyone seeing in consultation many patients with goiter is impressed with the fact that the diagnosis of toxic goiter is often missed entirely and that valuable time is lost in treating the patient by medical measures when surgical intervention should have been instituted at an early date; also, that often in spite of a correct diagnosis the same valuable time is lost by employing medical instead of surgical treatment.

Simple endemic goiter, the goiter of adolescence or pregnancy, so common in goiter districts, should be looked upon as a deficiency disease, the hyperplasia in the gland being due to a lack of iodin in the organism.

Marine's work in Akron and other city schools proves conclusively that endemic goiter can be prevented by the simple administration of small amounts of iodin twice a year. In fact, he believes that if the prophylactic treatment were generally adopted endemic goiter and cretinism would disappear.

The administration of iodin will cause many of these hyperplasias to disappear. If they resist medical treatment the practical point is to make the patient and her mother understand that the enlargement is not serious or a dangerous thing, and that operation is not indicated. Occasionally, one sees an enormous diffuse simple goiter of long standing, which may be operated upon if the case resists medical treatment.

The patient ill with early pulmonary tuberculosis, an effort syndrome, a psychoneurotic state, a cardiac disease, or a paroxysmal tachycardia, and who has a simple goiter should be safeguarded from surgical advice by a most careful and painstaking study. This should include rest in bed under observation, with frequent pulse and temperature chartings, and a most careful physical and clinical examination with several basal metabolism tests. Much unnecessary thyroid surgery would be prevented if this plan could be carried out in every case.

Before leaving the subject of adolescent simple goiter, let me mention that occasionally we see well-pronounced exophthalmic goiter in the very young. Mayo operated upon a child of eight for exophthalmic goiter. The writer has had two cases—one in a girl of ten, and one of twelve years of age.

There is also much unwarranted unnecessary surgery employed in the treatment of colloid

* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

goiter. These goiters cause no form of intoxication, as a rule are symptomless, and should be treated by medical measures unless pressure symptoms are present or there is unsightly deformity. The large solitary colloid cystic goiter had best be treated by operation. It is very doubtful whether these goiters can be improved by medical treatment, and there is danger of tracheal pressure symptoms or malignant degeneration developing. Cancer of the thyroid which can be diagnosed clinically before operation, cannot in the writer's opinion be cured by operation. Any goiter which is found to be substernal or intrathoracic upon examination should be operated upon, for delay in these cases may prove hazardous. It is not wise to treat adolescent or colloid goiter by medical measures unless these patients can be contented and made to report back at stated intervals for observation.

We distinguish two types of adenomatous goiter—the nontoxic and the toxic. The nontoxic adenomata appear early in life but the symptoms of hyperthyroidism do not develop until midlife. Plummer showed, in a large series of cases, that the average age of development of goiter was 28.9 years, and the patients came for treatment because of toxic symptoms nineteen years later after having these symptoms two and one-half years.

The adenoma remains in a quiescent stage for many years. Treatment for the nontoxic adenoma should be prophylactic, to prevent later thyroid intoxication. Nontoxic adenomata which become cystic or undergo calcerous degeneration should be looked upon as surgical, for improvement cannot be expected under medical treatment. Iodin and thyroid extract should not be administered to patients with these quiescent goiters for fear of changing them into an active state. X-ray and radium are also valueless.

The treatment of the toxic adenomatous goiter patient should be surgical, and surgery should be employed early, during the insidious onset of the hyperthyroid symptoms, for the recovery after thyroidectomy is prompt and striking and the patient is safeguarded against the myocardial degenerations which often follow prolonged periods of thyrotoxicosis. X-ray and radium are valueless in the treatment of the toxic adenomatous goiter.

The onset in exophthalmic goiter is usually very acute and without the prodromal nervous symptoms. The patient is likely to be knocked down by the suddeness and severity of the intoxication. There is great prostration, rapid loss of weight and strength, great nervous irritability, with marked tremor, palpitation and persistent tachycardia, sweating, and oftentimes in the severe cases nausea, vomiting, abdominal pain and diarrhea—the gastric crisis.

As a rule no exophthalmos or other eye symptoms accompany the initial attack and there is little or no apparent enlargement of the thyroid gland on inspection. These initial attacks—less severe perhaps than the one described—are so often incorrectly diagnosed as nervous prostration or nervous disability. In fact, it is quite common to examine patients who have gone through one or more of these acute exacerbations and have finally developed eye symptoms and visible enlargement of the gland before the true cause of the symptoms is ever suspected. The writer has had several patients severely ill with exophthalmic goiter, showing gastro-intestinal symptoms, referred to him with the request for immediate surgical intervention for some abdominal lesion. The disease comes in waves and cycles—the first one often severe enough to kill the patient—with periods of remission and a return to almost normal health. Many cases run a mild continued set of symptoms between attacks.

There are undoubtedly milder or abortive types of exophthalmic goiter in which there is a return to health with or without treatment, but the disease can be distinguished from the adenoma with hyperthyroidism by the sudden and severe onset and by the marked exaggeration of all of the symptoms of the hyperthyroid state, compared to the slow insidious onset of the latter with the milder chain of symptoms.

The treatment of the acutely sick exophthalmic goiter patient, with a basal metabolism of sixty or over and with extreme symptoms of the hyperthyroid state, is essentially medical. It is best carried out in an institution accustomed to handling goiter patients and should be psychical as well as medical. Absolute rest, mental and physical, are most important and no operations should be attempted during a rising metabolism or an exaggeration of the symptoms.

The preparation of these acutely sick patients for operation can be greatly facilitated by the use of x-ray and radium. Terry reported gratifying results in the preparation of fifteen very sick exophthalmic goiter patients by the use of radium. We have used both to advantage in the preparation of many patients.

The question of the curative value of x-ray or radium upon exophthalmic goiter however is a very debatable one. Bowing, of the Mayo Clinic, believes radium to accomplish about as much as hot water injections. Plummer says

the x-ray will have some retarding effect upon the thyroid gland, but is inclined to believe that most of the reported cures are due to a natural course of the disease. He believes that thyroidectomy is a better procedure than use of the x-ray. Crile says that the surgical treatment of hyperthyroidism combined with physiologic rest gives better results than x-ray or radium. C. H. Mayo reports failure, or but temporary benefit from the x-ray.

The treatment of exophthalmic goiter by x-ray should never be attempted except by one skilled in its use. The writer has seen some terrible burns follow x-ray treatment—the worst one followed but one exposure.

There are undoubtedly milder or abortive types of exophthalmic goiter which return to health with or without treatment. There are also milder continued types of hyperthyroidism with mild symptoms of the hyperthyroid state and with metabolism readings under thirty in whom we have used medical treatment with varying results. It is our practice, after securing the best coöperation of the patient, to place her at rest, correct any source of focal infection, give elimination strict attention, and use x-ray therapy on the gland. If the patient can ill afford the time which the nonsurgical treatment takes, she is given surgical instead of medical advice.

Frequent metabolism tests are taken after x-ray treatments and if the rates and the symptoms remain stationary at the end of eight or ten weeks, operation is advised. We have several patients who suffered with mild forms of hyperthyroidism, who have remained free from symptoms for periods varying from several months to several years as a result of this treatment or a natural return to health.

The writer is of the opinion that for certain selected mild forms of hyperthyroidism it is safe to give medical treatment a thorough trial, providing the patient is willing to coöperate in every way and will consent to surgical treatment should medical measures fail. There should be the closest coöperation between the medical man and the surgeon during the convalescence of the hyperthyroid patient. There is no disease where such coöperation is so important, unless it be gastric or duodenal ulcer. These patients should be made to rest under the guidance of a competent medical man for months—even a year or more after operation. They should be made to report to him at regular intervals for advice and treatment.

In conclusion let me urge again that no case with thyroid enlargement be considered in a surgical light until after a most careful, painstaking, and thorough examination, and let me condemn the prevalence of unnecessary, unwarranted, and unscientific surgery of the thyroid gland.

THE SURGICAL TREATMENT OF GOITER *†

HAROLD L. FOSS, M.D.

DANVILLE, PA.

Goiter has become a perennial subject at our scientific meetings, a hardy perennial in those parts of the country where the peculiar and yet unexplained geographic distribution of the disease renders the question of great personal interest, and so in a section of our own state where at least five per cent of the inhabitants manifest thyroid disturbance in some form, the subject is ever an appropriate one for discussion and even worthy occasionally to be surrounded with the dignity of a symposium.

Of the contributions made to our knowledge of the thyroid gland, those of Marine and Kimball on goiter prophylaxis; of Kendall on the isolation of thyroxin; of Du Bois, Means, Aub, Benedict and Boothby on the application of basal metabolism determinations in the study of thyroid dysfunction; of McCarrison, Marine and Gaylord, on the etiologic factor; and of Wilson and McCarty on the pathology, are especially outstanding. With the data of these investigators must be included the results of the clinical researches of Plummer working with the tremendous material of the Mayo Clinic and those of C. H. Mayo, of Crile, Frazier, Crotti, Lahey and many others on the subject of treatment. The results of the work of these men stand out brilliantly clear, above and beyond the great mass of illogical theorization and conjecture that has recently diluted the literature with deductions by the page which bear but little discoverable kinship to their premises and which have accomplished nothing but to confound and befog the issue.

From what has definitely been established so far, two basic facts stand out as of especial importance. The first is that the active secretion of the thyroid gland is composed of a highly complex organic molecule containing iodin as an important ingredient, and second, that the chief function of the gland seems to be to act as regulator of cellular metabolism. Although the remote, fundamental cause of goiter remains yet to be discovered, the hypothesis that

* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

† From the Department of Surgery of The George F. Geisinger Memorial Hospital.

iodin is an active agent in the thyroid hormone and that goiter is, in all probability, a geologic deficiency disease due to a lack of iodin in the organism, is the closest solution so far made of the problem of etiology. The researches of Marine and his co-workers have definitely established the rôle played by iodin in the prevention of goiter of adolescence, while those of Du Bois and others who have rapidly followed him in the study of metabolism in thyroid disease, have cast new light on the subject of thyroid physiology, establishing as they have of the gland incident thereto, bringing about that condition we recognize as goiter, is a natural conjecture if not a logical deduction and is an accepted theory of many authorities. However, if this be a reasonable hypothesis it is yet true that iodin has but little influence on goiter once it has become established, except perhaps in the colloid forms, and it is also true that but little tangible evidence has yet been presented of the bacteriologic cause of the disease.

One quickly finds oneself wandering far afield



Figure No. 1.
Right and left lobes from large "colloid" goiter.

the part played by the gland in the control of oxygen consumption and heat production.

That iodin deficiency may play a part, possibly the fundamental rôle in the production of goiter of the colloid form, may be accepted without reservation, but that it is the provocative factor in the causation of the adenomatous, hyperplastic or malignant forms is a proposition open to discussion. That the physiologic disturbance resulting from a decrease in the iodin requirements of the organism may so operate to lower the effect of certain normal immune factors within the gland as to permit the entrance of infecting organisms from the blood or lymph streams, and thus establish an actual thyroiditis with inflammatory increase in size into the realm of interminable speculation when engrossed with the fascinating subject of the thyroid and its pathologic states. A vast research must be conducted before the problem can be thoroughly elucidated but we are concerned, in this portion of the symposium, with the treatment of goiter and especially with the treatment of goiter by surgical means.

Nothing better typifies the tremendous advance that has been made by surgery than what has been accomplished in the treatment of the diseases affecting the thyroid gland. In 1866 Samuel D. Gross wrote, "Can the thyroid, when in a state of enlargement, be removed with reasonable hope of saving the patient? Experience emphatically answers, No! No sensible

man will on slight consideration attempt to extirpate a goiterous thyroid gland. If a surgeon should be so adventurous or foolhardy as to undertake the enterprise, I shall not envy him his feelings while engaged in the performance of it or after he has completed it, should he be so fortunate as to do this. No honest and sensible surgeon, it seems to me, would ever engage in such a thing." We have advanced nodular, so-called adenomatous and cystic goiters of adult life. If there are effectual means other than surgical of curing these conditions, I have no knowledge of them and do not believe they exist. That such lesions should not remain untreated is a truth positively established, for, with few exceptions, no person has existed many years with such a goiter without having suffered certain myocardial damage,

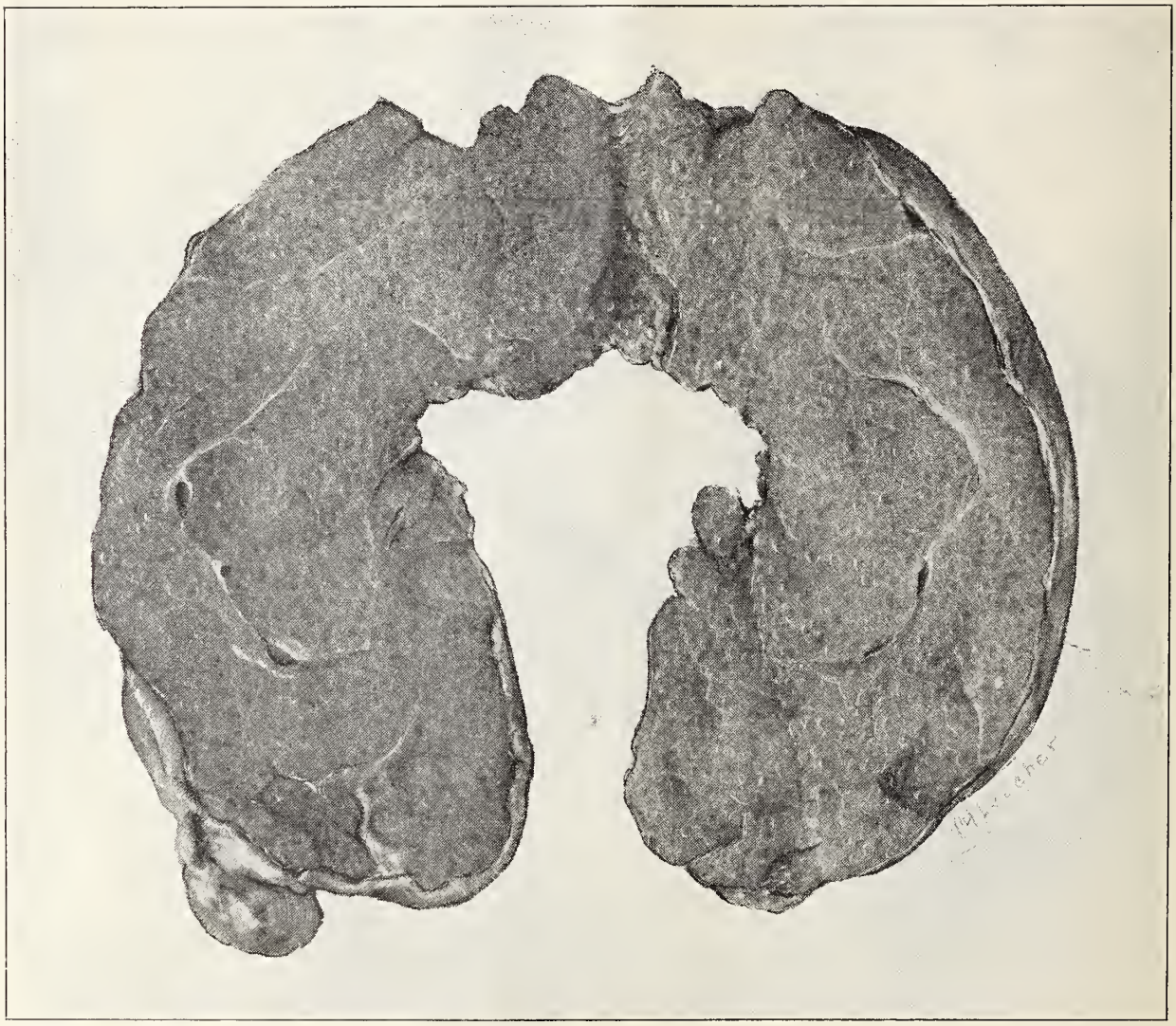


FIGURE No. 2.
Bisected lobe from large colloid goiter showing the granular, shiny "sago" appearance produced by distention of the acini with colloid.

far in sixty years, and Gross, the leading surgeon of his time, would no doubt, be profoundly interested in the modern thyroid clinic where operations for the relief of goiter are of daily occurrence and which are attempted with every assurance that a prompt and satisfactory cure will be achieved, with but little discomfort to the patient and with a mortality of less than one per cent.

I believe at the present time there can be but little difference of opinion on the question of what is the appropriate treatment for the large and even if not for the sake of removing an unsightly and annoying tumor which produces increasing embarrassment to respiration and deglutition, the progressive degenerative changes such a lesion usually produces in the organs of the cardiovascular system positively indicate its early surgical removal. Such cardiac disturbance as sinus arrhythmia, auricular fibrillation, premature contractions and heart block are frequently associated with nodular thyroids of but a few years standing and are nearly always present in one form or another in pa-



Figure No. 3.

External appearance of so-called "multiple adenomatous goiter." The term is an inaccurate one for many such goiters do not show true follicle formation. Such goiters are frequently associated with toxemia.

tients suffering with nodular goiters of many years duration. Nothing but surgical excision of the goiter will prevent the occurrence of such complication or will check their progress once they have become manifest.

Until very recently much uncertainty has surrounded the subject of the treatment of toxic goiter. There are apparently two common forms of this condition, separate and distinct, differing widely in their pathologic pictures but both accompanied by the syndrome of hyperthyroidism. Clinically both diseases are characterized by an increased basal metabolism and, therefore, have in common the symptoms developed by an increased rate. That adenomata may of themselves produce hyperthyroidism and that goiters frequently exist in which adenomata, either encapsulated or not, and areas of hyperplasia exist coincidentally have been proved. It is believed that in certain forms, hyperthyroidism may be produced by an excess of thyroxin thrown out from a hyperfunctioning adenoma, while the hyperthyroidism of true exophthalmic goiter seems to result

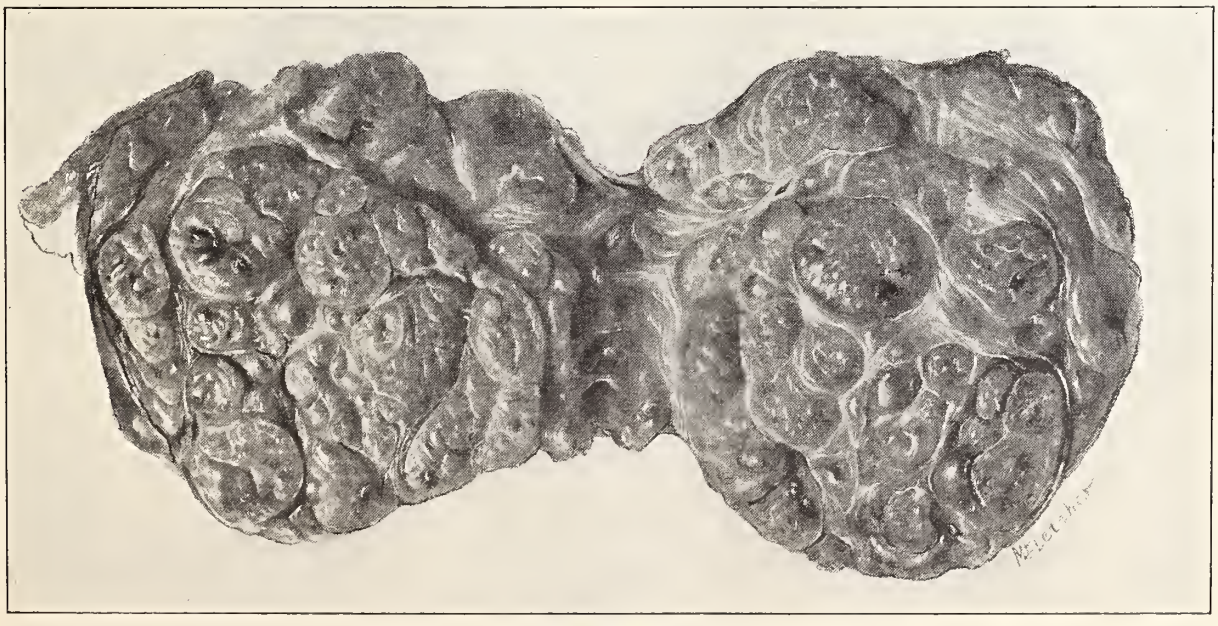


Figure No. 4.

Bisected lobe from "multiple adenomatous" goiter.

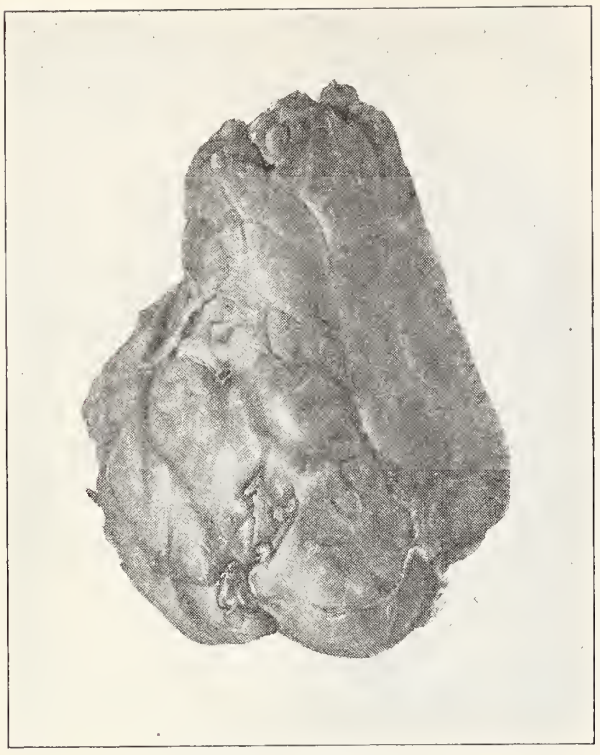


FIGURE No. 5.
External surface of left lobe resected from patient with typical exophthalmic goiter.

from an excess of gland secretion produced in the hyperplastic and superactive acini of the otherwise normal gland. In either case surgical treatment is practically the same and is aimed at reduction of the excessive secretion by resection of the gland.

Hyperthyroidism may be associated with colloid goiter, colloid adenomatous, multiple degenerative adenomatous and diffuse parenchymatous hyperplastic goiters. The disease is characterized by no single pathologic picture, being associated with a wide variety of thyroid lesions with but little other than cellular hyperplasia common to their histologic pictures. With all types the one cardinal factor in the clinical syndrome is the increased metabolic rate and it is this that is the basic symptom, just as is hyperglycemia, for instance, in diabetes.

A host of pathologic changes are associated with goiter, and the frequently seen inflammations, hemorrhages, calcifications and various degenerations must be considered no more peculiar to the thyroid than to other bodily tissue. Any or all may appear in the thyroid of the toxic patient, but the one finding peculiar to hyperthyroidism is parenchymatous hyperplasia, which can be demonstrated in varying degrees of activity in all toxic glands. It is generally accepted that hyperthyroidism results from an increase of thyroxin thrown into the blood stream from the hyperactive gland, therefore our treatment is based on the reduction of

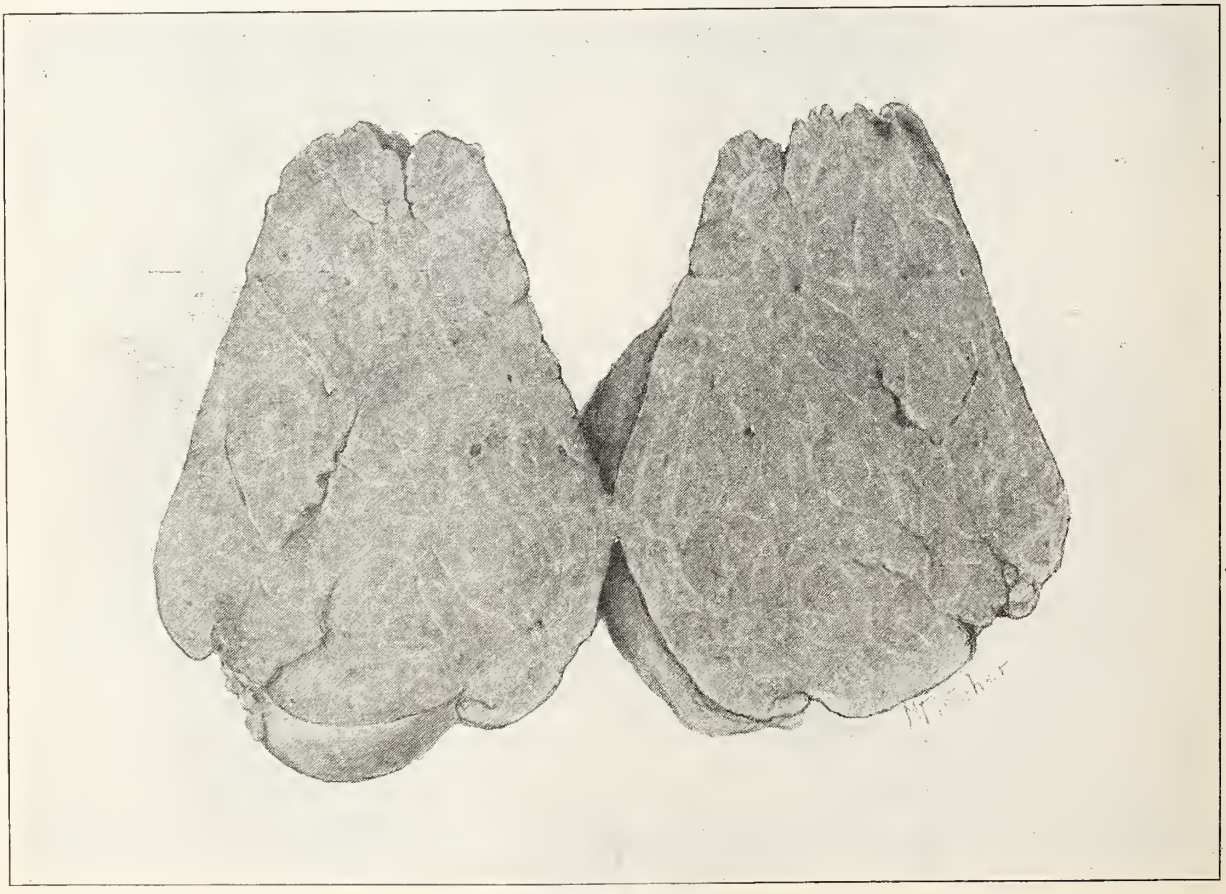


FIGURE No. 6.
Bisected lobe of typical exophthalmic goiter showing smooth, meaty "beef steak" appearance characteristic of this type of thyroid.

this abnormal output, whether the gland be that of pure exophthalmic goiter or whether associated with one or all of the associated pathologic conditions just referred to.

Should we operate on the diffuse colloid goiters of adolescence? That this type of thy-



Figure No 7.
A typical nodular, so-called multiple adenomatous goiter.



Figure No. 8.
The same patient as shown in Fig. 7, following operation.

roid enlargement follows the gland's reaction to some form of indefinite physiologic stimulation, very possibly the result of iodin deficiency, is pretty well accepted. That the administration of iodin or thyroxin in such cases will often produce a rapid reduction of the goiter, as has been pointed out by Marine, Kimball and Plummer, seems also true, yet that such treatment will often not only utterly fail but will in addition produce rapid loss of weight with extreme nervousness and without perceptible change in the size of the gland is equally true, as I have found in my own clinic in a number of instances. There is at present complete lack of unanimity of opinion on this question, but I do not believe the usual small colloid of adolescence should be treated by the surgeon.

It is the patient with marked hyperthyroidism or exophthalmic goiter who gives us the greatest concern, for here we are dealing with the most serious and progressive disease affecting the thyroid gland and one especially grave when occurring in young girls of from 15 to 20 years of age. This is not an occasion for a debate on the relative merits of medical and surgical treatment in exophthalmic goiter. Both have their advocates. The nonsurgical treatment has its mortality and I believe it would be high if careful follow-up records were available. Ninety per cent of the toxic patients who come to us have been treated medically and in the majority of instances have not profited by the delay.

In no branch of surgery must the characteristics of the disease be more thoroughly understood, the type of operation more accurately



Figure No. 9.
Typical hyperthyroidism with pronounced exophthalmos.



Figure No. 10.
The same patient as shown in Fig. 9, 8 months after double superior pole ligation followed by bilateral reaction. Pulse and basal metabolism normal. Weight gain 42 lbs.

selected and the time of its performance more carefully planned than in the surgery of exophthalmic goiter, and judgment based on an extensive experience is the most essential feature in the control of mortality. At the Geisinger Memorial Hospital about sixty per cent of our

patients receive preliminary ligations. The multiple stage plan of operation is carried out in all but the moderately toxic cases, the procedure beginning with a ligation of one superior pole, followed in four to six days by ligation of the other. Possibly the inferior thyroids



FIGURE No. 11.

Recurrent hyperthyroidism. Patient operated upon eight years before, at which time the right lobe only was removed. Temporary relief with recurrence of marked symptoms eight years later. Pulse 140. Weight loss 25 lbs. Basal metabolism 160.



FIGURE No. 12.

The same patient as shown in Fig. 11, six months following superior pole ligation and resection of remaining left lobe. Weight gain of forty pounds. Pulse and basal metabolism normal. Patient's general condition excellent.

will next be ligated, to be followed by one or two stage resection of the gland. Thus, step by step the patient is carried into a more favorable phase until the final and effective excision of the gland is achieved. By this means, patients who have appeared hopelessly toxic on admission to the hospital have been successfully operated upon and restored to health. Many of our patients on admission have been so ill that they would have been considered, a few years ago, as absolutely beyond aid. Some have even been delirious and yet have responded satisfactorily to this plan of treatment.

In our last series, 192 consecutive patients with goiter of various types have been operated upon without a death. Of these patients two were operated upon for suppurative thyroiditis, while there were six double ligations, twenty-nine single ligations, eighty-eight double resections and one hundred nineteen single resections, a total of two hundred forty-five operations upon the thyroid with no mortality.

CONCLUSIONS

At Danville, we are never without a number of thyroid cases under treatment, and the opportunity in our community and in those adjacent is especially favorable for careful follow-up observations on all our patients. We have had,



FIGURE No. 13.

Markedly toxic patient, too ill when admitted even for ligation. Preliminary treatment with radium followed by right then left superior ligation and later two-stage thyroidectomy. The most toxic case in entire series. Photographs taken after patient had greatly improved following superior pole ligations. When first admitted was far too ill to be photographed.



FIGURE No. 14.

The same patient as in Fig. 13 after final operation. Patient now perfectly well. Pulse and basal rates normal. Actively engaged as a milliner. Example of what may be accomplished in an almost hopeless case by the multiple stage operative method.

up to the present time, at the Geisinger Hospital about seven hundred goiter cases. From this experience I feel that I may, with some degree of justification, set down a sort of goiter creed or profession of faith, at least so far as my personal convictions are concerned.

I believe that we are dealing with a highly specialized gland, with a complex and as yet little understood physiology and pathology but that certain basic facts have been sufficiently well established to indicate clearly a plan of treatment.

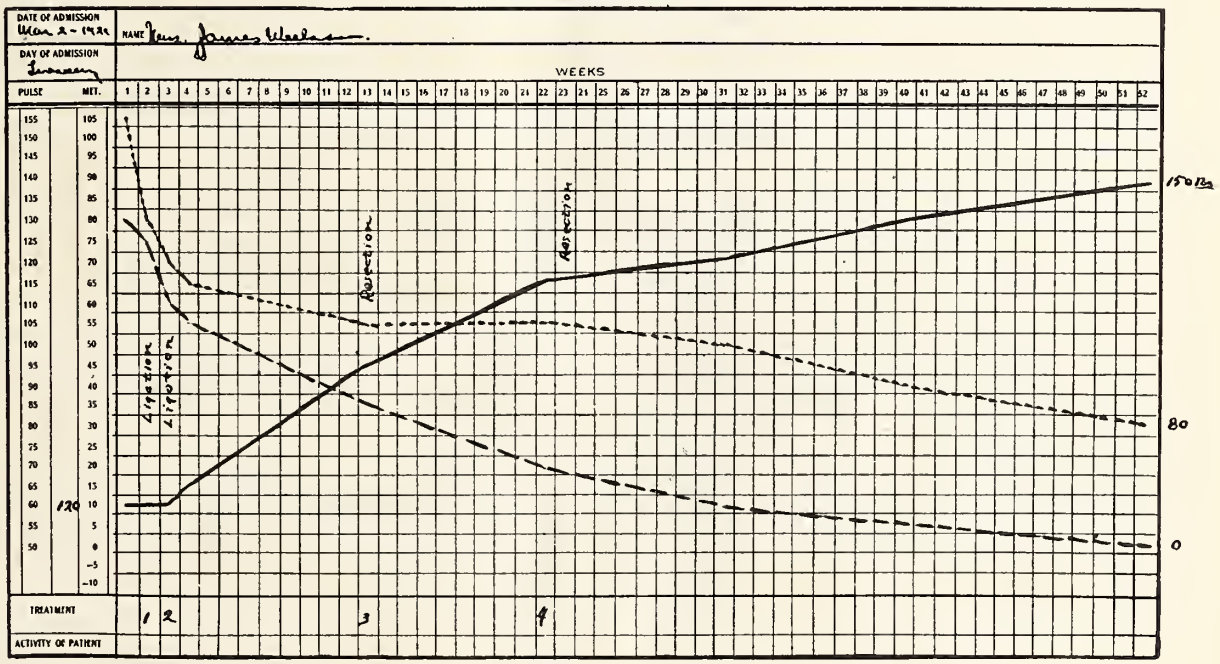
I believe that most goiter patients are being menaced by long periods of temporization with all sorts of therapeutic vagaries which in most instances accomplish nothing so far as relief of the condition is concerned, but by the usual interminable delay that goes with many such make-shifts the opportunity is furnished for an insidious and progressive disease to destroy the heart muscle and to demoralize the nervous system.

I believe that no medicine, no drug, no therapeutic measure of any sort except surgery should be utilized, except as adjuncts, in the handling of patients with goiter other than of the colloid and malignant forms. I believe that radium and the x-ray are valuable agencies in the preliminary treatment of very toxic cases, and in certain skilled hands may produce results in the true exophthalmic form of goiter equal to those of surgery, but that the process of treatment is long and often tedious and that the likelihood of relapse is great.

I believe that colloid goiter of adolescence is at present passing through that phase of surgical exploitation through which every disease seems to pass at the outset. The palm which was handed from the retroverted uterus to the appendix, and from the appendix to the movable kidney and ptosed stomach is being at present shared about equally between monkey glands and colloid goiter. The prevalence of small nontoxic colloid goiters of adolescence, the comparative ease with which they may be removed and the low mortality rate accompanying such removal have made thyroidectomy in young girls a favorite procedure with certain zealous surgeons, who either through crass stupidity or from a wish to swell their goiter statistics, or both, subject these unfortunate young people to a thoroughly needless operation. Such goiters are physiologic, are rarely toxic, usually disappear spontaneously and if treated at all should be treated by the physician.

I believe that innumerable patients have been subjected to needless operations on the diagnosis of exophthalmic goiter when the symptoms were merely those of effort syndrome, disordered action of the heart, neurocirculatory asthenia or functional neurasthenia; but on the other hand I believe even more persons with marked

THE GEORGE F GEISINGER MEMORIAL HOSPITAL
THYROID PROGRESS CHART



Postoperative progress chart of typical case of advanced, markedly toxic, exophthalmic goiter. Heavy line—Weight curve. Upper dotted line—pulse curve. Lower dotted line—metabolism curve.

On admission, the patient's weight was 120 lbs., the pulse rate 155, and the basal metabolic rate + 80. At the end of the 52nd week following graded operations consisting of double ligation and double resection, the weight is 150 lbs., pulse 80 and the basal metabolic rate 0.

hyperthyroidism have been set down as cases of simple goiter and left untreated merely because the one sign of exophthalmos was absent, while all the other and equally important and thoroughly characteristic evidences of the disease were being completely disregarded.

I believe that much confusion in the differential diagnosis between toxic and nontoxic goiter has resulted in late years from the vogue of the Goetch adrenalin and other alleged tests on which reliance has been placed, rather than upon accurate basal metabolism determinations and especially on the sound judgment of clinical experience.

I believe that the results of basal metabolism determinations, blood sugar estimations, the Goetch test, the Kottman reaction, etc., if they are to be utilized at all, should merely be placed in evidence with other signs elicited in the general examination of the patient, and of these, the basal metabolism test is by far the most valuable.

I believe that surgery offers a great deal in the treatment of goiter, far more than any other therapeutic means, but that it must be most carefully regulated, the patient thoroughly treated in an institution where the staff is constantly in touch with this type of work, where the internist, surgeon and pathologist have equal opportunities for the study of the disease and where the team work is perfect. When such conditions obtain I know of no results in surgery which are more immediate, more lasting and more satisfactory than those following the surgical treatment of goiter.

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X-RAY AND RADIUM TREATMENT OF GOITER*

G. W. GRIER, M.D.†

PITTSBURGH, PA.

To the radiologist intending to treat a case of goiter, the first step is the recognition of the type of goiter under consideration. There are many classifications of goiter. Since the prime indication for radiation treatment of goiter is the presence of hyperthyroidism, I will submit the following classification which has but two main divisions: 1, cases with hyperthyroidism; 2, cases without hyperthyroidism.

CLASSIFICATION:

Hyperthyroids
- Adolescents
- Hyperthyroids without goiter
- Hyperthyroids on basis of old simple goiter
- Exophthalmic goiter
- Intrathoracic goiter

Without Hyperthyroidism
- Adolescents
- Simple goiter
- Colloid goiter
- Cystic goiter
- Intrathoracic goiter
- Malignant thyroids

Cases in the first group may be treated by radiation; those in the second group should never be.

DIAGNOSIS:

The recognition of hyperthyroidism is not always an easy matter and often depends more on the combination of a number of so-called minor symptoms than on the presence of the generally recognized cardinal symptoms. These latter are nervousness, tachycardia, enlarged thyroid and exophthalmos. If exophthalmos is present, then I believe this symptom-complex represents hyperthyroidism in practically all cases. However, it is a widely known fact that many cases of hyperthyroidism do not have exophthalmos and there are few who would hesitate to make a diagnosis because of its absence. A diagnosis made on the remaining three symptoms, then, really means a diagnosis based on tachycardia, since nervousness is too common in the sick to have any value as a differentiating symptom, and enlargement of the thyroid is not essential to hyperthyroidism. For this reason, careful consideration should be given to the following symptoms, several of which will always be found in conjunction with any or all of the major symp-

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† Roentgenologist to Passavant Hospital, Presbyterian Hospital, Magee Hospital, St. John's Hospital. Associate Professor of Roentgenology, University of Pittsburgh, Pittsburgh, Pa.

toms mentioned above: Frequent headaches, weakness, loss of energy or inability to carry on the usual routine, often from unexplainable reasons; sleeplessness, depression, shortness of breath, palpitation on exertion or otherwise; digestive disturbances, especially gas, diarrhea, or constipation and diarrhea alternating; profuse sweating. The appetite is usually good, but in spite of this the patient loses weight. These patients have an anxious, worried look which one soon learns to recognize. This is so constant that if a suspected case sits contentedly in my office with a calm and serene look on her face, I never make a diagnosis without a basal metabolism test first. As a matter of fact, since this test has come into general use, I have it done on most of my cases and believe it really should be done in all. My experience with this test has been very satisfactory. While I do not believe one should make a diagnosis on this test alone, in many cases where the symptoms are very obscure or the history unreliable, a plus metabolism will establish the diagnosis. It is particularly valuable in the goiter of adolescence where one is not sure whether the enlarged thyroid is merely physiological, or a mild degree of hyperthyroidism exists.

Having determined the presence or absence of hyperthyroidism by a consideration of the clinical evidence and the basal metabolism test, we next attempt to classify the hyperthyroids. Those without hyperthyroidism have no further place in this article as they should not be treated by radiation, with the exception of malignancies and here the radiation should supplement surgery.

Adolescent Goiter:

The goiter of adolescence occurs at or about puberty. It is usually physiological, but in a small percentage of cases becomes pathological. No treatment at all is indicated unless hyperthyroidism exists. If so, a small amount of x-ray treatment combined with proper hygiene brings about a speedy return to normal. Many of these cases, of course, recover under medical treatment alone, but the convalescence is unquestionably hastened by mild radiation. The percentage of recoveries in this class of cases is practically 100.

I have further subdivided hyperthyroids into those without goiter and the true exophthalmic goiter cases. I am not sure whether there is any fundamental difference between these two classes of cases, or whether they are simply different stages of the same disease. My impression at the present time is that many of the cases of hyperthyroidism without goiter are the result of chronic infections or irritations such as diseased teeth or tonsils, bad habits or bad hygiene, perhaps (as McCarrison believes) intestinal infections; and that exophthalmic goiter or true Graves' disease is a distinct entity and is usually the result of shock, fright, worry, or other derangements of the nervous system. We surely see a considerable number of hyperthyroids that appear to have little or no tendency to develop into serious cases of Graves' disease.

Hyperthyroidism without goiter:

We are accustomed to classify under this heading those cases in which exophthalmos and goiter are not predominating factors. Some of these cases have a slight exophthalmos without appreciable enlargement of the thyroid, some have enlarged thyroid without exophthalmos and some have neither, but they all have the symptom-complex of hyperthyroidism with an increased basal metabolism. These cases should be carefully gone over and any defects remedied before the hyperthyroidism is treated. If the tonsils are diseased and operation is inadvisable on account of the patient's physical condition, the tonsils can be radiated at the same times as the thyroid. I have had several such cases respond satisfactorily. I have also had cases of marked hyperthyroidism cured by removal of the tonsils alone, without other treatment. In these cases of hyperthyroidism without goiter, especially where a probable exciting cause is found, after such exciting cause is removed I believe radiotherapy should be the treatment of choice rather than operation upon the thyroid. Radiation will give satisfactory results in a very large percentage of these cases.

Exophthalmic Goiter:

In the well established cases of exophthalmic goiter, the treatment should be selected to meet the individual requirements of the case. In the acute case with extreme thyrotoxicosis, rest in bed and medical treatment may be the only thing possible, for the time being at least. The average case may be treated by radiotherapy, usually with good results. If there are pressure symptoms from the enlarged thyroid, surgery is preferable to radiation. This is particularly true in intrathoracic goiter where the pressure symptoms may be urgent. Surgery is also preferable in those cases which are unable from economic reasons to carry out medical or radiation treatment for a sufficient period of time, or whose home conditions or grade of intelligence make the proper hygienic treatment impractical. Also, patients of a naturally pessimistic temperament, or who have preconceived ideas of the

futility of any other treatment than surgery, had best be operated upon at once, as otherwise their continual worrying and downcast state of mind is a powerful hindrance to their recovery. I do not mean to insinuate that patients can "wish themselves well," but I do believe that rest for the mind is as essential as rest for the body in the medical treatment of hyperthyroidism—and radiotherapy should be classed as medical treatment. A patient who lives in a constant state of excitement, worry, or depression, will not improve unless these conditions can be altered, and these facts should be considered when selecting the method of treatment. However, I believe that the same hygienic treatment should be carried out for several months following operation as is commonly used during the medical or radiation treatment.

Hyperthyroidism superimposed on simple goiter:

These cases are usually adenomata developing in a simple goiter, or else they are cases of exophthalmic goiter which go through periods of inactivity. In either case, the hyperthyroidism can be controlled by radiation, but as it has little or no effect on the goiter and usually none on the adenoma, especially if it is undergoing cystic degeneration, operation is preferable unless there is some contraindication.

Intrathoracic Goiter:

If accompanied by hyperthyroidism, this can be controlled by radiation. However, the treatment will have little effect on the size of the mass and if the pressure symptoms are considerable, operation is better when it can be done safely.

Radiotherapy of Goiter:

The value of radiotherapy in thyroid diseases depends upon the ability of the rays to produce an inhibition or abolition of the secretory function of the gland, or even the complete destruction of the secreting cells themselves. It is obvious, then, that this treatment is only indicated where there is an excessive secretion from the thyroid, that is, in hyperthyroidism. If there is no hyperthyroidism present, radiation is not indicated. In fact, it is contraindicated, since the atrophy which will be produced by the treatment will reduce the normal gland to a state of hypothyroidism or myxedema. For this reason it is necessary to make a careful and accurate diagnosis before instituting or recommending radiotherapy. If it is definitely decided that no hyperthyroidism is present, this treatment should not be used, even if there is thyroid enlargement. We never treat large thyroids for cosmetic effect, for two reasons: *First,* if there is no hyperthyroidism, the treatment is harmful; *second,* the size of the gland is not apt to be much affected by the treatment except in hyperthyroid cases, and these are usually too sick to bother about the unsightliness of their large necks. The gland does not reduce much after radiation because the destroyed secretory cells are partially replaced by fibrous tissue which leaves the patient still with a large gland.

As regards the method of application, I have had the best results from rather mild dosage. At the present time, I treat the patient once a week, exposing one lobe of the gland only at each sitting. This makes only two areas to treat. I have discontinued treatment of the isthmus as a routine procedure. Each area is given about one-half a skin erythema dose at each sitting, and after both lobes have been treated the patient is given a rest from treatment for two weeks, when the process is repeated. There are two advantages in spreading the treatment out in this manner. The first is that you see the patient oftener, and thus have a better chance to observe her progress and to control her actions. The second is that it takes a patient several months to return to anything approximating normal after a severe hyperthyroidism, and large massive doses cannot be persisted in for this length of time. The dosage indicated is not so small, nor so frequently repeated as to increase the danger of telangiectases, but is still enough to cause a gradual regression of the disease and I believe is the happy medium which gives the best results. I use x-rays of a penetration corresponding to a 9 inch parallel gap, filtered through 6 millimeters of aluminum. When I use radium, I use only the gamma rays, with the radium placed 1 inch from the skin. I have discontinued the routine exposure of the thymus area in cases of hyperthyroidism unless roentgenograms show that the gland extends down into the chest, or that the thymus is enlarged. A few years ago, this treatment was considered essential, but after following the method for two years without any apparent improvement in results, I abandoned it about three years ago.

The radiation treatment must be supplemented by a careful regulation of the patient's hygiene. The patient must have as much rest as possible. Occasionally, the patient must continue employment in some gainful occupation as a means of livelihood, or perhaps do her own housework. If the patient must work, she must also be brought to realize the necessity of saving herself as much effort as possible and resting completely when her work is finished. Severe

physical exertion and excitement are very bad for these patients. They must have 8 to 10 hours sleep out of each 24. They must have plenty of fresh air and all the nourishing food they can take care of. Tea, coffee, alcohol and tobacco are forbidden and meat allowed only occasionally. Late hours, parties, etc., are forbidden. However, it must be remembered that such restrictions can be carried to the point where boredom worries the patient worse than a little diversion.

I am not in the habit of using any medicine whatever in conjunction with radiotherapy. I am occasionally asked to administer iodin or thyroid extract to cases I am treating. The only times I have tried this, the patient has been made worse by such medication.

I use the roentgen ray instead of radium in the average routine case for two reasons: 1st, it is cheaper for the patient; 2d, my radium is usually busy treating cases where the x-ray cannot be used on account of the location, viz., mouth, uterus, etc. I believe the action of the two is identical and either may be used. Where it is inconvenient for the patient to come to a roentgen laboratory for treatment, radium may be used and the applications made less frequently. It is in this class of cases that I use radium the most. Where the thyrotoxicosis is severe, care must be taken in the application of radium that too large a dose is not given and the condition greatly aggravated. In treating thyroids, not more than one-half an erythema dose should be given at a sitting, either with radium or with x-ray.

If the patient does not improve under radiotherapy, it should not be continued indefinitely on account of the danger of producing secondary changes in the skin. The average case requires about six months for regression to a stage where treatment may be discontinued. If each area of skin receives but one treatment every three or four weeks with half an erythema dose at each sitting, there is not much danger of secondary skin changes such as telangiectases. However, under the most favorable conditions, telangiectases will occur in a small percentage of cases, just as keloids will develop after a certain percentage of operations. If there is no definite improvement as shown clinically and by the basal metabolism after six months' radiation, the case should be operated. If the case is slightly improved, but not well, radiation can be continued at long intervals and the medical and hygienic treatment persisted in until the patient returns to normal.

DISCUSSION

Dr. Samuel J. Waterworth (Clearfield, Pa.): The subject has been so thoroughly well covered that any further remarks seem to me superfluous, other than to emphasize certain points. One is that too much thyroid surgery has been done in the past. I am willing to confess that I myself have done too much thyroid surgery and that I am doing less of it. I am seeing more thyroid cases and doing less surgery. I believe that the chief mistake has been made in taking out adenomas under 25 or 30 years of age. In the last two years I have had one patient that I operated on before 20 years of age. Of course everyone knows that the adolescent goiter is entirely medical and that the simple adenomata early in life are medical.

It becomes more and more apparent that thyroid surgery should be done at places where they are prepared to take care of thyroid cases. Dr. Guthrie has called attention to the psychic factor, which is most important from the time the patients are received into the hospital until they are improved.

As to the medical treatment of goiter, of course we all are agreed about the idea of therapy. In a certain class of cases in large, obese women, with large goiters of the adenomatous type, some of which have become cystic and some have undergone calcareous degeneration, when the women are not only obese, but some are myxedematous, I have used thyroxin with benefit. Thyroid extract by mouth I believe is bad in such cases. It is an uncertain way of giving it, but when you give thyroxin intravenously in small doses you know how much has been given. If you see the patients often you can control them. Another disadvantage of feeding by mouth is that they take medicine and get along for a long time and do not come back to see you. When you give it intravenously they come back and you have them absolutely under control.

I should like to make a plea with Dr. Grier that all cases of goiter be gone over most carefully for focal infection. I do not think we should be in a hurry to operate on any goiter case. When a goiter case comes to the office the first thought is to go over the case from every standpoint. If toxic adenoma is present you have plenty of time; you can probably take out tonsils, refer to the dentist and have his work done before referring for operation. If surgeons are going to do less thyroid work, operating on only their dangerous cases, only their cases of hyperthyroidism and toxic adenomata, their mortality rate is going up, that is, their operative mortality.

Dr. Lloyd G. Cole (Blossburg, Pa.): I was glad to hear Dr. Grier state that he was in favor of smaller doses of x-ray. I think in the past the x-ray has been an indefinite sort of treatment and I know that a great many cases have been over-exposed. I never had it clearly explained to me just how much damage you are going to do to the parathyroids. I once saw a case which had heavy x-ray exposure and I believe she was developing tetany. She had mild stiffness in the fingers. I gave patient intravenously calcium lactate and she improved. Whether the x-ray had anything to do with the damage to the parathyroid I do not know. Another thing I do not understand is just what damage might be done to the recurrent laryngeal nerve in very heavy x-raying.

In thyroid work the improvement in recent years has been due to the fact, I believe, that our pathologists have simplified our classification of goiters. They have made a classification that they understand and

the rest of us understand, so that we understand each other better. The pathologist and surgeon have been working more closely together. Graham makes a very simple classification into simple goiters, hyperthyroid goiters and the malignancies of the thyroid. Graham has found that cases of fetal adenomata are especially prone in later life to malignant development and I believe that there are more malignancies of the thyroid than was formerly believed.

In regard to the ligation of the inferior thyroid artery, I believe that the parathyroids gain most of their circulation from the inferior thyroid arteries and the ligation of both of these arteries may result in a tetany three or four days following thyroidectomy. We treat these tetany cases with calcium intravenously. There is another condition that has been brought to my mind more in recent years—the condition of the goiterous, laryngeal paralytic stenosis following thyroidectomy. Some of us have been greatly concerned over the fact whether we have done damage to the recurrent laryngeal nerve. I believe in large adenomatous goiters that more commonly than has previously been observed, we will have developed a paralytic stenosis. It is a very distressing condition and a condition which concerns the surgeon very greatly. In the majority of these cases, the recurrent laryngeal nerve has not been injured at the time of the thyroidectomy. I believe that every case that comes before the surgeon for thyroidectomy should have a thorough laryngeal examination before the operation is made.

One more thing about our apparatus: Less than two weeks ago Dr. Crile stated to me that the basal metabolic estimation was especially of value in the differentiation of border-line cases. He said, "I do not use it in hyper cases so much, on account of the psychical effect and the routine of putting them through the metabolic test."

DR. CHARLES H. FRAZIER (Philadelphia, Pa.): In reference to the splendid surgical papers that have been read, I think we all feel that Dr. Marine has given us a most constructive contribution to the subject of goiter. I have felt for a long while that toxic goiter is more or less of a transitory condition, and that the management of toxic types should be the same as in other forms.

I was going to say a word in regard to basal metabolism. There are in our profession certain supermen that have risen to the plane where they do not need the assistance an examination with modern instruments will give them. I am sure that Dr. Crile does not belong to that group and I was very glad to hear Dr. Cole say that Dr. Crile acknowledged that he still used the basal metabolism apparatus. Personally, I would not accept on their face value statistics of anyone in which the diagnosis and the differentiation between the various types of goiter were not substantiated, at least, by the metabolic apparatus. We have used this apparatus in our clinic for a number of years (since early in 1919) and we have not changed our opinion in regard to it. In fact, I find that every member of our staff becomes more and more enthusiastic about it.

About that time we made an arbitrary classification of toxic goiters into three groups: those with a metabolic rate up to 40%, those up to 50% and those up to 60% and over, and we made an arbitrary ruling that we would always do a primary thyroidectomy up to 50% and never do a thyroidectomy when above 60%. In Philadelphia, we have practically nothing but toxic goiters. We never do a thyroidectomy when basal metabolism is bove 60%, and we find that a very good working rule whenever you are in doubt as to the toxicity of the case, judging it alone from any other clinical phenomena. Basal metabolism in toxic goiter is just as essential as is the x-ray film in the record of a fracture history. Following that general plan of surgical treatment based on the degree of toxicity, we have been able to reduce our mortality to what we consider a comparatively low point, though not as low as those noted this afternoon.

I am in entire accord with the general principles that have been laid down in the paper of Dr. Guthrie and Dr. Foss this afternoon. I think they presented the surgical aspect of goiter in an able and intelligent way and I also approve the conservative views Dr. Grier has taken in regard to the x-ray treatment. Personally, I have not the slightest objection to a patient being transferred to the roentgenologist for treatment, provided the roentgenologist understands the goiter problem as well as I do and will return that patient to me at any time if there be retrogression in the course of that particular case. Such a relationship I have with Dr. Pancoast in the University Hospital in Philadelphia. And in turn, cases which initiate in his department he will transfer to my department if patients do not yield promptly to roentgen therapy. I do not believe we ought to wait too long because most of the toxic cases should be operated on at a reasonably early stage rather than take the desperate risk. I think Charles Mayo stated the situation when he said he had lost about ten years of his life working in the goiter clinic. Management of these desperate goiter cases is wearing on the surgeon's nerves.

I would take exception to the statement made this afternoon in regard to the actual technic in either ligation or thyroidectomy. I have a feeling (and I may be entirely wrong, I am afraid, because my position is not accepted by the majority) that there is less hazard as a rule in doing a double ligation than in doing a single ligation on a bad risk, and I have the same feeling that there is less hazard in double than single lobectomy in such cases. I feel very much more comfortable if I have carried a bad risk through the point in an operative procedure where both lobes are removed than if I had left too little to prevent symptoms of tetany, which may carry him or her off in 24 hours. In those cases in which in the course of operation there is unavoidable loss of no inconsiderable amount of blood we have found that convalescence is hastened by the use of indirect blood transfusion immediately after the operation, either in the operating room or after the patient is returned to bed.

DR. WILLIAM S. NEWCOMET (Philadelphia, Pa.): Dr. Grier has fully covered the subject of treatment of goiter by the roentgen ray, and the most important point in his paper is the one he makes upon dosage. By following his recommendation, giving only small units at each sitting and repeating them at proper intervals, it is hardly likely that one will observe the horrible burns mentioned by some of the speakers. In the early days when the control of the x-ray was more or less a matter of speculation, severe reactions were observed and quite often the treatment, if not a disaster, was annoying. In fact, most individuals preferred the scar of the knife rather than reddened skin or keloid following the x-ray reaction. At present the treatment of goiter with the very mild dosage must not be confused with the results of the new high-power, high-penetration dosage given in malignancy.

The conditions are quite different and are as far apart as the north and south poles.

Radium is to be preferred to the x-rays in those cases where the condition of mental irritability makes the latter dangerous or the enforcement of restraint annoying. Radium can be applied with absolutely no discomfort to the patient.

In the last few years a number of cases have been referred for treatment in which, when the operation had failed to relieve the symptoms, they were treated by the x-rays. The dosage given was about the same as recommended by Dr. Grier, and they were relieved of their distress from their cardiac symptoms. It may not be amiss to call attention to the fact that these cases were referred for treatment by other physicians, showing that in some localities there is not that existent terror of the x-rays.

It would seem that in selected cases there should be no reason why radiation should not be tried before operation; then if there is no relief from this very easy procedure the more difficult one could be followed.

Certainly the employment of the metabolic test in these cases cannot be considered harmful. Furthermore it will be a guide to the amount of radiation required, and particularly when there is only a slight difference between the hyper and hypo case.

A number of young women and girls have been referred for treatment where the symptoms were due to eye-strain, constipation or indigestion, and by the correction of these derangements were relieved without the application of the x-rays. Therefore, all cases subjected to radiation should be placed under the same critical examination as if they were to undergo a major operation.

Dr. Jonathan M. Wainwright (Scranton, Pa.): I would emphasize the question of focal infection, because I am quite sure that is it not appreciated as much as it ought to be. My associate, Dr. Jackson, sees most of the simple forms of goiter first and he has for some time adopted an iron-clad rule that when these cases do come in they are always thoroughly looked over for foci of infection, and he has a very surprising series of patients in whom these tests have been made and one thing and another found, remedied and the whole so-called goiter picture has disappeared. I emphasize that because a great many do not appreciate it at its full value. All of us should insist upon this more. If these cases are thoroughly searched the question as to surgery or x-ray often would not have a chance to develop very much further.

One other thing that I should like to object to is the very general use of the term goiter of adolescence. I think that is a term which is very much over-ridden. If a young girl, from 14 to 18, has a thyroid gland which you can feel, it is not necessarily a disease. The merely palpable gland in a girl is not a goiter of adolescence, or anything at all, and the sooner we make the child and her mother realize it, the better for everybody. If we get it into our heads that there is such a disease as goiter of adolescence we are going to have an absent-minded fit occasionally and operate on some of them.

If we tell the people that the child has a goiter of adolescence but that it does not need to be treated they will not believe us. They will be quite sure that a disease with a name like that must be treated. And they will find somebody who will take it out, or who will x-ray it. More likely perhaps it will be an osteopath or a chiropracter, and if these geniuses are not too rough the child after awhile will have become perfectly normal.

If a young girl comes to us at puberty and we note her breasts are a little larger and firmer than usual we do not damn her by telling her she has bilateral hypertrophic mastitis. Why pin a terrible sounding name on a child because the thyroid is a little bigger than usual?

Dr. A. E. Roussel (Philadelphia, Pa.): I have been more than pleased by the favorable expressions regarding the value of basal metabolism by the speakers. I am an internist and not an x-ray man. Formerly when I found the medical treatment of toxic goiter, especially the exophthalmic goiter, did not improve, in a large percentage of my cases I turned them over to the surgeons. In the past few years the x-ray treatment of goiter, together with rest in bed and increased feeding, a point which should be emphasized, has materially changed my views on the subject, and I have so reported these facts on different occasions. I have now over 50 cases of my own that have been treated by x-ray, without counting other cases that have been under my observation. Thirty-five are of the acute exophthalmic type. In fact, the first case was refused operation by a prominent Philadelphia surgeon, and we tried the x-ray on her. The acute exophthalmic type is much more favorable than the colloid or adenomatous, which subsequently become toxic. They are to be left to the surgeon. The other cases show a vastly pronounced benefit. I think about 75% of my cases have been cured and 10 or 15% improved, and some of the cures are seven years old.

As to basal metabolism, if particularly high (over 50 or 60), even the x-ray dosage should not be employed at that particular time, but rest in bed and a proper diet, for a period of time previous to the exhibition of rays should be prescribed. And I take it the surgeons should adopt the same procedure previous to their operative interference.

Dr. Guthrie (in closing): I heartily agree with what Dr. Grier and Dr. Newcomet have said about employing small repeated doses of x-ray for these cases. Some eight or nine years ago two x-ray men came to Sayre to see our work, and wrote us up in a rather uncomplimentary way, because we did not use the full therapeutic skin dose of the ray in our treatment of the patients. I believe there is a hyperemic state of the skin in these exophthalmic patients which will not stand a strong dosage of the ray. Anyone seeing x-ray burns follow x-ray therapy in these goiter cases is bound to be conservative. X-ray therapy should be used only by those who are experts in its employment. I was particularly careful to say in my paper that it is only the patients showing mild continuous symptoms of hyperthyroidism and with a basal metabolism below thirty per cent, who should be given the opportunity of improving under conservative treatment. I call particular attention to rest, elimination, and the correction of any source of focal infection. Let me repeat that after a reasonable length of time—two or three months—if there is no tendency for improvement, and no change in the basal metabolism rate I believe that operation is advisable.

Dr. David Marine (New York City): One of the most pleasant things I have ever experienced at a medical meeting has happened this afternoon—a representative group of surgeons from a great state advising conservatism in operations on the thyroid. This marks a great advance over the attitude of a few years

ago, and it is greater perhaps than most of us now realize. Dr. Wainwright emphasized the so-called physiological thyroid enlargements—those mild thyroid insufficiencies which occur around the age of puberty —and that great caution should be exercised in advising operation in these cases.

As regards exophthalmic goiter, I have spent seventeen years studying it and must confess we still know very little of its fundamental nature. I realize there are those who think differently. The thyroid certainly is only secondarily involved, but it is markedly involved, and the fundamental problem to be solved in order to clear up the nature of the disease is what excites the thyroid to increased activity. A few years ago it was considered bad form to refer to the thyroid as being secondarily involved in exophthalmic goiter. To-day, almost every one believes that the primary stimulus which initiates increased thyroid activity lies outside of it and probably in the field of disturbed interrelations of the sex and parasex glands with the thyroid. There is no question that at present the best means we have of controlling exophthalmic goiter is by depressing the increased metabolic rate by partial thyroid extirpation, but this is a very crude means, and if our premises are correct it is attacking the disease from the wrong end. I feel confident that the day is not far distant when we will have a much clearer conception of the nature of the disease and be able to control or prevent it by more rational means than thyroid extirpation. But do not misunderstand me; at present the quickest way of lowering the metabolic rate and of giving the patient physiological rest is by partial thyroid removal.

It is now generally realized that we will never keep our heads above water in the fight against simple goiter by treating it either medically or surgically. We must apply some method of prevention. Fortunately, such a method is available. In the case of exophthalmic goiter, it is equally true that we will not be able to hold our own in the fight against it by treating it medically or surgically. Again, some method of prevention must be developed and unfortunately this looks at present a long way off. This becomes of even greater moment when we consider that while simple goiter is in general decreasing, exophthalmic goiter is unfortunately increasing. Exophthalmic goiter and toxic adenoma, in my opinion, are only different phases of the same disease. It is largely a question of the age at which they develop. These adenomata become toxic about the time of the menopause in most cases. Adenomatous or nodular goiter is the usual form of goiter in man. The lower animals do not have thyroid adenomata. The inhabitants of India and of the Alpine districts of Europe have adenomatous goiters as frequently as we do, yet toxic adenoma is exceedingly rare. Dr. Foss said the number of nontoxic adenomata were much fewer than those that were toxic. That is true, because his experience is surgical. Nevertheless the vast majority of thyroid adenomata are not associated at any period of life with toxic symptoms.

DR. FOSS (in closing): I believe Dr. Marine misunderstood me slightly. While all nodular goiters are not associated with hyperthyroidism, goiters of the adenomatous form, even when producing no definite evidences of toxemia, seem to play an important rôle in the production of parenchymatous changes in the myocardium. Kocher called our attention to this many years ago, while Krumbhaar of Philadelphia and Willius of the Mayo Clinic and many others who have resorted to the electro-cardiograph as an aid have established a definite relationship between nodular goiters, particularly the degenerating forms, and myocarditis. Many adenomatous goiters apparently are symptomless, causing no evidence of trouble other than from mechanical pressure, but a very large number, particularly if they are of long standing, must be considered as a potential menace to the individual.

Dr. Roussell (Philadelphia): What percentage?

Dr. Foss: (Answer) I would say that at least 30% of patients with long-standing nodular goiters will show, roentgenologically, enlargement of the heart, and under electrocardiographic studies, definite evidences of myocardial damage. This whole question is yet in a nebulous state and requires much careful research before it can be thoroughly cleared up. Dr. Ervin and I have watched a large number of these patients at Danville during the past few years and have been struck with the great prevalence of nodular goiter associated with myocardial decompensation in patients who do not show positive evidences of hyperthyroidism.

Dr. Sheridan spoke of double ligation and of the excellent results which usually follow such a procedure. The improvement in a severely toxic patient following such an operation is often startling, but such patients should never be permitted to pass out from under our observation until a thyroidectomy is ultimately performed, for although greatly improved and often apparently cured after ligation of both superior poles, a relapse will surely occur if excision of the gland is not carried out. Such patients may remain well from two months to several years following a double ligation but practically all will relapse if an excision is not performed. The same is true if the operation consists merely of a lobectomy. A permanent cure will never follow such an incomplete operation. I have operated on a number of patients on whom partial thyroidectomies or ligations have been performed and who for a time were apparently cured, yet in whom there was a recurrence of symptoms with profound hyperthyroidism developing later.

I was startled by Dr. Grier's statement relative to roentgenology in the treatment of exophthalmic goiter occurring in the patient of moderate means. If I understood Dr. Grier correctly he said that the economic side was an important feature and that when the patient was of limited means it was better for him to seek the surgeon rather than the roentgenologist. It seemed a very surprisingly unexpected and altogether frank statement.

We have been very fortunate in having the opportunity of hearing Dr. Marine this afternoon. As President Litchfield has well said, what he has given us has been real wisdom. The many years of intensive study Dr. Marine has devoted to this subject, his unusually well-ordered mind, and his gift of scientific and productive research, have resulted in his becoming probably our greatest authority on the thyroid gland.

DR. GRIER (in closing): Dr. Cole has asked what was the influence of x-ray treatment upon the parathyroids. We do not destroy the thyroid but simply cause it to regress to normal, and I suppose the same thing applies to the parathyroids. There is not a complete destruction, but simply a regression. In regard to the effect on the recurrent laryngeal nerve, I should say that the nerves are probably the most resistant of any tissue in the body to radiation. I remember seeing about twenty years ago a very severe x-ray burn on the abdomen, where the entire abdominal wall was

sloughed away and the nerves swung across this empty space like telegraph wires. I have never seen any effect on the recurrent laryngeal nerve that could be attributed to radiation.

Dr. Frazier brought up the point of keeping up radiation until the patient is finally in such a state that it is difficult to do anything for her. This brings up the question as to how soon you should expect a patient to get better under radiation treatment. I do not think you could expect very much change inside of a month and should not expect a patient to recover inside of six months. It is not fair that radiation treatment be given up too soon. It is a slow method of treatment and if the patient is getting a little better as time goes on, you are justified in keeping it up.

I think Dr. Wainwright's remarks in regard to the goiter of adolescence emphasize the fact that we should do something for these cases. Otherwise, they will go to osteopaths, chiropractors or advertising quacks. When they come in, you should study them thoroughly and decide whether the enlarged thyroid is simply physiological or whether they are suffering from hyperthyroidism, and treat them accordingly.

In regard to Dr. Foss's remarks about my statement that it may be necessary to treat the patient surgically for economic reasons, he misunderstood my line of reasoning. What I was thinking of was that it would take about six months for the patient to recover under radiation treatment and that the patient was practically an invalid for six months. If she cannot stop work for that length of time, she had better have an operation and that will allow her to return to her work more quickly. That brings up a point I mentioned and feel very strongly upon, and that is that cases after operation must continue medical treatment, and that operation does not finish the treatment. I think this is the cause of the recurrences that Dr. Newcomet spoke of. I see these cases right along.

The work of Aub and Means in Boston showed that immediately after operation, the metabolism goes to normal. In a few weeks it goes up again and it is not until about a year and a half after operation that it finally comes back to normal. During this period after operation, the patient should be treated with proper hygiene the same as you would have to treat her if you were using medical treatment alone.

DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE PANCREAS*

G. E. HOLTZAPPLE, M.D.

YORK, PA.

There is no syndrome or symptom complex that is pathognomonic of disease of the pancreas. The proper evaluation of every symptom is important. In the diagnosis of diseases of the pancreas, it is necessary to correlate the symptoms present, the history of the case and the physical findings. By exclusion one condition after another may often be ruled out until the probabilities point to disease of the pancreas. The nature of the disease and whether it is acute, subacute or chronic accounts for the marked difference in the symptoms, whether they are local or general.

In order to appreciate the significance of the symptoms one must always bear in mind that they point either to structural changes in the gland tissue or physiological disturbance. The known etiologic factors must always be kept in mind in attempting to make a diagnosis of diseases of the pancreas. The real nature of the disease found is often diagnosed by the pathologist instead of the clinician or surgeon. The diseases of the pancreas most commonly found are inflammatory and under this head come acute hemorrhagic necrosis, and acute hemorrhagic pancreatitis, gangrene and abscess. These conditions, if all are found, usually occur in the order named. The primary condition is usually an acute pancreatic necrosis due to autodigestion and this is followed by hemorrhage into the necrotic areas. If the patient lives four or five days or long enough for the acute symptoms to subside, gangrene may follow, and if there is an invasion of pus organisms abscess will develop.

The onset of acute hemorrhagic necrosis may be very acute and terminate fatally in a few hours or within four or five days; or it may be subacute and the patient recover in a few weeks. It is believed that many of the milder cases which end in recovery are mistaken for other conditions attended by severe pain in the epigastric region or in the upper part of the abdomen. The diagnosis most frequently made is gall-stone. The most prominent symptom present is pain in the epigastrium. This is usually of sudden onset, very severe, and attended by marked shock. The pain is usually about the midline in the epigastrium, sometimes a little to the left side and a little above the umbilicus. It may radiate into both hypochondriac regions, and it may be severe in the region of the gall-bladder or in the region of the appendix. It may radiate to the left shoulder. Soon the pain beginning in the upper part of the abdomen extends over the whole abdomen. There is usually some tenderness on deep palpation in the beginning of the attack, attended by a sense of deep resistance which extends across the abdomen above the umbilicus. The tenderness soon becomes very much more marked and at the same time there is increased muscular rigidity. This involves at first the upper part of the recti. This may be attended by a sense of rigidity in the lower part of chest and upper part of the abdomen making it impossible for the patient to sit or stand erect or take a deep breath. There is often a peculiar cyanosis of the face, body and extremities which

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is suggestive of acute hemorrhagic pancreatitis and is regarded as an important symptom.

The patient lies on the back with knees flexed and finds it impossible to lie on either side or sit or stand, because of a painful sense of tension in the upper part of the abdomen. While the pain and tenderness are at first confined to the upper half of the abdomen, it soon extends, to a lesser degree, over the lower half. Vomiting usually occurs early, but does not give any relief to the suffering. The vomitus often contains bile and at times blood. This may recur and in some cases soon subsides. The temperature may be normal, subnormal or very slightly elevated. There is often decided shock to the nervous system very early in the attack, characterized by tachycardia, cyanosis and weakness—in short the patient seems at once to be very seriously ill.

In the beginning of an attack, if deep palpation is possible, no distinct mass is palpable. A palpable mass, globular in shape, with distinct outline, a little above the umbilicus usually can be made out about the third or fourth day. At times a mass is to be felt first in the left flank and a little later it becomes palpable in the midline, a little above the umbilicus.

When the onset is marked by great muscular rigidity as well as pain, the mass is not palpable until the acute symptoms diminish, which is about the third or fourth day. The bowels, at first, are usually constipated. Enemas, in the beginning of an attack are often ineffectual. After three or four days, the bowels usually move well. At times there is diarrhea and a globular mass is then discovered. As the muscular rigidity subsides, careful palpation will enable one to outline the mass and find it to extend deep into the abdomen. It is not usually movable on palpation, deep breathing or on change of posture. The tumor is apt to be exquisitely tender and may give a sense of tense fluctuation. In a small number of cases there may be jaundice in the early stage of the disease. A symptom complex that points to acute hemorrhagic pancreatitis consists of the sudden onset of severe pain in the epigastrium, muscular rigidity, tenderness on pressure, temperature normal, subnormal or very slightly elevated, pulse not much accelerated, a marked cyanosis of face, trunk, and extremities, dyspnea, weakness, and the patient seemingly very gravely ill. There is usually a moderate leukocytosis.

If after three or four days there is a sudden elevation of temperature (100-104), one may suspect the development of gangrene of the pancreas; and if chills, fever and sweats ensue one may suspect abscess formation. Glycosuria is rarely present. Many of these patients give a history of previously having had attacks of biliary colic, pain in stomach and bowels, nausea and vomiting, or of gastric and intestinal indigestion. Examination of the feces does not aid much in making a diagnosis.

Among the serious complications of acute hemorrhagic pancreatitis, in those who live long enough, are abscess of the omental bursa, thrombosis of the splenic, portal or mesenteric veins, perforation of the stomach, duodenum and colon. Among the acute conditions that may resemble acute hemorrhagic pancreatitis and must be ruled out, are acute intestinal obstruction, simple biliary colic, acute peritonitis due to perforation of gastric or duodenal ulcer and gall-bladder, acute appendicitis and rupture of abdominal aneurism. Before any operation is attempted one must be sure to rule out angina pectoris and angina abdominis.

In acute intestinal obstruction the vomiting is persistent and does not subside, but becomes more and more marked and is attended by increasing exhaustion. This condition is not attended by the marked early shock usually found in acute hemorrhagic pancreatitis. In the latter condition there is no obstruction of the bowels and flatus passes. In intestinal obstruction gases cease to pass. In intestinal obstruction there is visible peristalsis, with distension above the point of obstruction. The marked early symptoms of shock to the nervous system are lacking in intestinal obstruction and develop later in the disease. In localized peritonitis, due to perforation of gastric and duodenal ulcer, there is the history of pain occurring with regularity after meals, often for a long period. A reliable diagnosis of gastric or duodenal ulcer may have been made previously.

In biliary colic we have the history of pain in the region of the gall-bladder, pain radiating to the right shoulder, and of colic at irregular intervals, often followed by tenderness along the right costal border, slight fever and jaundice which disappears in a short time, also a history of recurring deep tenderness over the region of the gall-bladder and recurring jaundice. There is no such marked shock to the nervous system as is found in a typical case of acute hemorrhagic pancreatitis. The pain of acute hemorrhagic pancreatitis does not radiate to the right shoulder but may radiate to the left.

In acute cholecystitis, the pain may be severe and the tenderness more circumscribed and limited to the region of the gall-bladder. Soon, however, the infection may cause a localized peritonitis with increased tenderness and muscular rigidity and in case of perforation there

may be evidence of a very rapidly spreading peritonitis. There would likely be more fever and a more rapid pulse in acute cholecystitis, and less cyanosis than in acute hemorrhagic pancreatitis.

In acute appendicitis it seems the pain may be almost anywhere in the abdomen and often very general with general abdominal spasm, but soon the pain and muscle spasm become localized to the region of the appendix. Early in the affection deep palpation will usually elicit deep and acute tenderness over the region of the appendix. A digital examination of the rectum will often help to confirm the diagnosis of appendicitis by finding very acute tenderness high up in the region of the appendix, and no tenderness or very little in the left side. This I have found of assistance when there is general muscular rigidity, interfering with deep external palpation, or when the muscles are relaxed as they sometimes are in tuberculous appendicitis. One must not mistake a gastric crisis for acute hemorrhagic pancreatitis. A careful history, examination of the pupillary and deep reflexes should enable one to rule this out. One must rule out a possible angina pectoris or abdominis before attempting an operation.

It is only in typical attacks of acute hemorrhagic pancreatitis that one is usually able to make a diagnosis, but inasmuch as many of the conditions that simulate it require surgical intervention, the all important work for the clinician is to determine the propriety and necessity for timely surgical intervention to save the patient's life, no matter what the condition is that may be found.

We now do know that there are rather frequent attacks of subacute hemorrhagic pancreatitis which do not require operation and from which patients do recover. These cases are frequently diagnosed as cases of gall-stone. A subsequent operation for gall-stones often reveals the absence of gall-stones or of any previous disease of the gall-bladder or bile ducts, and to the operator's surprise he finds areas of fat necrosis which are pathognomonic of acute pancreatitis.

The symptomatology indicative of chronic indurative pancreatitis is usually the same as that indicating the conditions which cause chronic obstruction of the pancreatic duct or chronic infection of the gland. An accurate diagnosis of this condition is seldom made by the clinician. A diagnosis of pancreatic insufficiency is at times simple, but to determine the cause of this condition is a different problem. An underlying atherosclerosis of the vessels of the pancreas may be suspected when there is evidence of pancreatic insufficiency without other discoverable cause and when there is evidence of marked arteriosclerosis elsewhere and especially when attended by marked hypertension. Associated conditions sometimes found are small granular kidneys and cirrhosis of the liver. Pancreatic apoplexy is now believed to be due to this condition, the same as cerebral apoplexy, and occurs rather a little after middle life; whereas acute hemorrhagic pancreatitis is most common between the ages of thirty (30) and fifty (50).

Pancreatic insufficiency is indicated by steatorrhea and creatorrhea when the external secretion is deficient, and by diabetes mellitus when there is degeneration or destruction of the islands of Langerhans.

The following cases suggested to me the propriety of selecting this subject for a paper:

CASE I

Mrs. G. H., age 34, American, white, occupation housework. Family history: Negative. Personal history: She had the usual infectious diseases of childhood and diphtheria at four years of age. She was well since a child except slight colds in the head and constipation requiring a mild laxative once or twice a week.

Present Illness: While apparently in perfect health she was suddenly seized with a sharp pain in the epigastric region which disappeared in a few minutes. A few hours later the pain recurred in the same region and rapidly became worse. There was, at the same time, a sense of constriction around the lower part of the chest and upper part of the abdomen, so that she was unable to take a deep breath. There was also some rigidity in the recti, causing her to bend forward. The pain in the epigastrium and muscular rigidity increased so that in a few hours she was compelled to lie on her back with knees flexed on the abdomen.

A few hours after the onset of pain the patient became nauseated and felt very sick. The pain was very severe in the upper half of the abdomen, which was also tense and very tender. Gradually the lower half of the abdomen became involved, but the pain, tenderness and muscle spasm were less marked than in the upper half. The pain required a hypodermic and she was given morphin grain 1/4 with atropin grain 1/150. This gave the patient partial relief. During the first night the patient vomited once quite freely without any relief. The muscular rigidity continued uninfluenced by the morphin. There was no evidence of diaphragmatic breathing. The patient remained constantly on the back with knees flexed. The abdomen was slightly distended. There was slight elevation of temperature, never much fever, and the pulse only slightly accelerated. Leukocytes 12,000 and urine was negative.

Hot stupes to the abdomen were soothing. There was no nausea after the first day. At no time was there any evidence of special tenderness over the region of the appendix or gall-bladder. On the third day the acute tenderness began to subside but there was still exquisite tenderness over the epigastric region. Breathing was upper costal. At the end of the third day the patient's general condition was

better, abdomen less tense and tenderness almost limited to the epigastrium. Now for the first I found a globular mass, having a smooth surface and with distinct outline a little above the umbilicus. It seemed to be about three inches in diameter. The mass was exquisitely tender. On careful palpation it seemed to extend deep into the abdomen. Two surgeons were called in on the case. The conclusion reached was that the mass was inflammatory. At this time, the patient's general condition and the local symptoms had improved and it was deemed inadvisable to operate. The patient made a final recovery. In a few weeks all tenderness was gone and no evidence of a mass could be found. The final conclusion reached was that it was a case of acute hemorrhagic pancreatitis.

CASE 2

Mrs. J. M., age 45, American, white, occupation housework. Called at my office October 27, 1921. Her chief complaint was pain in the back, loss in weight and weakness.

Family history: Parents living. Father is well; mother has heart trouble. Both are 73 years of age. One brother died at 33 of apoplexy. One sister died of diphtheria. She gave no history of tuberculosis, Bright's disease, cancer, mental or nervous disease in the family.

Personal history: She had scarlet fever, diphtheria, measles, mumps, whooping cough and pneumonia as a child. She had tonsillitis and la grippe a few times. Last illness and attack of the latter disease 6 years ago. She went through one pregnancy and was delivered with forceps 18 years ago. She made a slow but complete recovery. Menstruation normal at present.

Present illness: She seemed to be perfectly well until two months ago when, in apparently perfect health, she was taken with a sharp pain in her back, a little worse on the right side. In a few hours the pain subsided. About one week later the pain recurred in the same region. She was confined to bed for a few days, when the pain had largely subsided, though a soreness continued.

The pain and soreness radiated around the lower part of chest and upper part of the abdomen, worse on the right side. She soon discovered that she suffered more when lying on the back and was much relieved by sitting or standing.

Her appetite continued good, there was no distress after meals and her bowels were regular. She noticed nothing abnormal in the stools. About two months after the onset of pain, she discovered that she had lost in weight to the extent of 18 pounds. She then came to my office.

Physical examination: Color slightly pale, no jaundice. There was slight emaciation. Eyes, ears, nose and mouth normal. Teeth well preserved. No struma, and no enlarged glands found anywhere. Lungs clear, heart normal. No evidence of arteriosclerosis. Pupillary and deep reflexes present. Abdomen negative, except a mass in the epigastric region. Rectum and pelvic cavity negative.

A little above the umbilicus I found a globular mass almost in the midline. It was about 3½ inches in diameter. It was smooth, regular and distinct in outline, not tender except on deep palpation, and it could easily be determined that it extended deep into the abdomen. It was not movable on palpation, respiration or change of posture. It felt as if there was tense fluctuation. The larger portion of the mass was to the right of the median line. There was no free fluid in the peritoneal cavity. There were no dilated veins on the abdomen, no hemorrhoids, no edema of lower extremities, no jaundice, no evidence of pyloric or duodenal obstruction. There was no pulsation or bruit in the mass. There was no sensory disturbance in the corresponding skin fields. Her temperature ranged from normal to 99 1/2, pulse 84-108, respirations 20-28.

Leukocytes 10,500, polys. 68%, lympho. 22%, mono. 6% and eosin. 4%.

Urine was pale amber, acid, spec. grav. 1010 and examination for albumin and sugar was negative. The sediment contained epithelial cells and few leukocytes. There were no red cells, no casts. There was evidently no pressure on the renal veins. Gastric contents normal, feces normal, Wassermann negative.

X-ray examination of abdomen: Stomach was normal in size, shape, position and outline. The duodenal cap was irregular, probably due to pressure.

Intestines revealed nothing abnormal except ptosis of transverse colon. There was a faintly visible shadow suggestive of a mass in the upper part of the abdomen.

I felt I could exclude the stomach, bowels, liver, gall-bladder, bile ducts, kidney, but I could not exclude the pancreas nor retroperitoneal new growth. I ventured the diagnosis of pancreatic cyst. At operation it proved to be sarcoma of the pancreas.

These two cases had one feature in common—a globular mass, smooth surface, regular and distinct outline in the same region. The one was attended by acute symptoms, sudden onset and disappeared in a few weeks. The other case was of gradual onset and development, no acute symptoms and a progressively downward course.

The moment I dismissed the first one I encountered the second. The pathologist diagnosed the second; the diagnosis of the first was only a venture, but I am glad to report that the patient is well although she had one hint of pain in the same region a few months ago.

DISCUSSION

DR. ELMER H. FUNK (Philadelphia, Pa.): Dr. Holtzapple's paper is timely in that it calls attention to the need of constantly keeping in mind the rôle of pancreatic lesions in all acute and obscure abdominal lesions. The pathologist and the surgeon have taught us that pancreatic lesions are not uncommon. One of my pathologist friends told me yesterday of the finding of two cases of acute hemorrhagic pancreatitis among a recent series of 112 necropsies, the pancreatic lesion having been unsuspected during life. This, I venture to say, is not an unique experience. Unfortunately the pancreatic syndrome is not clear cut. Wardell as long ago as 1871 put it tersely when he said that "no symptoms are pathognomonic of pancreatic disease; an assemblage of symptoms indicates the probability of its lesions." And these words hold true to-day. The surgeon, by the aid of "exploratory incision" wisely performed, has been a help in the diagnosis of many cases.

I cannot add anything to what has been said with regard to the acute cases, the symptomatology and diagnosis of which have been so clearly stated by Dr. Holtzapple. I do wish, however, to add a word with regard to the less acute pancreatic lesions which, often insidious in their onset and obscure in their mani-

festations, are ultimately a far greater cause of human suffering than the acute lesions. Whether we accept Mauquet's theory of pancreatic lymphangitis or Opie's views in regard to the influence of retrojection of altered bile, or both, the fact remains that lesions of the pancreas are in many instances related to infections of the biliary apparatus. The presence of known biliary tract infection, therefore, ought to direct our minds toward the possibility of pancreatic disease. The same may be said with regard to other upper abdominal diseases; for example, peptic ulcer. It is quite true that the pancreatic involvement may be slight, but it may, however, be sufficient to obscure the clinical picture presented by these other diseases. Lack of improvement following the treatment of these other conditions may be due to a permanently damaged pancreas. Although it is not strictly within the province of this discussion to consider treatment, it is trite to recall that the correction of extrapancreatic upper abdominal disease will go a long way toward preventing serious pancreatic complications.

As an example of an obscure complaint of pancreatic origin, one might point to the case report in the current issue of the *Lancet* by Dr. Lindsay. The patient had had colicky pains in the upper abdomen for fifteen years. During the past two years pain had increased and loss of weight had become evident. The abdominal examination was found to be normal. At operation chronic calculous pancreatitis was found. The stones were removed and the patient recovered. Lindsay points out that there are two groups of patients with pancreatic calculi. One is exemplified by the case quoted and in the second group the disorganization of the gland proceeds till its disordered functions is evidenced in glycosuria, pancreatic stools, persistent dyspepsia, and in some cases interference with the bile-ducts.

We know little of the pancreatic lesions associated with the acute infectious diseases. The deep-seated upper abdominal tenderness found occasionally in patients with mumps would indicate an involvement in this disease.

Cancer of the pancreas is, as a rule, inoperable when the symptoms and signs point to the diagnosis. Futcher collected 58 cases of pancreatic cancer among 41,000 patients admitted to the Johns Hopkins Hospital; 38 were confirmed by operation or necropsy and of these 8 were primary. Males past middle life, with obscure symptoms referable to the upper abdomen, call for a special consideration of pancreatic cancer and early exploration by a competent surgeon is advised.

Time will not permit more than casual reference to the various laboratory tests—the study of the enzymatic activities of the duodenal contents, the diastase test, Loewi's test, etc. Many tests have been advocated, but most of them are surrounded by considerable uncertainty. As Garrod has stated, "none is to be looked to for a penny-in-the-slot diagnosis." The laboratory tests are a bit of evidence and not a verdict. The most valuable findings are true steatorrhea and creatorrhea. When these are both present we have formidable evidence—and Garrod would say well nigh conclusive evidence—of pancreatic disorder. Both the external and internal secretions of the pancreas take part in the utilization of the fats, the former being concerned with fat splitting and the latter with fat absorption. When in addition to impairment of fat digestion and absorption there is creatorrhea—the simplest test of which is the recognition of striped muscle fibers in the feces—a pancreatic lesion is most probably present.

In conclusion, I wish to express an appreciation of Dr. Holtzapple's paper which I am sure will serve as a reminder to all of us that pancreatic lesions will be recognized more frequently if we will but bear them in mind in the study of our patients. The diagnosis must in most instances, however, rest upon circumstantial rather than direct evidence.

Dr. W. W. G. Maclachlan (Pittsburgh, Pa.): I am afraid I have very little to add to the very complete summary of pancreatic conditions presented by Dr. Holtzapple.

There is one thing that has struck me in seeing pancreatic cases that have died, and that have been proved to be pancreatic cases by finding lesions in the pancreas in postmortem examination. In acute types, the presence of intense abdominal pain has been somewhat of definite importance in diagnosis, and in neoplasms (cancer at the head of the pancreas) having a resemblance to cancer of the gall-bladder, the jaundice, which is usually present at first, tends to clear up, although not completely, as the case advances. It is our impression that the jaundice caused by neoplasms of the biliary tract increases.

Dr. Lawrence Litchfield (Pittsburgh, Pa.): Dr. Holtzapple and Dr. Funk have left nothing to be said as to diagnosis, but this is a most interesting and serious condition. Dr. Archibald, of Montreal, has published a number of articles on the connection of pancreatic disease with the biliary duct, with its small sphincter muscle, which may be thrown into spasm under different conditions. Of course you know that pancreatic cysts generally contain bile. Archibald mentioned a case to me—which he may have published—in which the appearance of glycosuria in one of these cases of doubtful diagnosis led them to suspect that bile had been forced into and damaged the pancreas. They made an exploratory operation, after repeated attacks had been diagnosed as gall-bladder disease. The operation relieved the condition, the glycosuria disappeared and the patient made a complete recovery.

The important fact from the patient's point of view perhaps is that the diagnosis of pancreatic disease is a *tour de force,* an exhibition of great skill on the part of the clinician; but after all the only absolute diagnosis of pancreatic diseases is by operation, either ante- or postmortem. I do not feel that any case should be diagnosed as malignant disease of the pancreas, or of the gall-bladder for that matter, and the patient be condemned to the slow death which will probably occur without an exploratory operation.

One of the most difficult questions to decide is the matter of our responsibility in these acute cases—to decide whether or not we can safely wait for further developments before operating. Is there enough evidence to justify us in feeling that it is safe for us to wait for the acute symptoms to subside? The vital question from the patient's point of view is not what is the exact diagnosis, but what is likely to occur if an exploratory operation is not performed.

I feel more and more of the opinion that there is great danger in getting too much confidence in our diagnoses, and not considering these cases sufficiently from the patient's standpoint. An exploratory operation in the proper hands is a trifle as compared to the risk from neglect of the same.

Dr. Truman G. Schnabel (Philadelphia, Pa.): There is only one particular phase of the pancreas

question that I should like to say something about, and that concerns itself with the value of examination for the presence of pancreatic enzymes in the duodenal contents. Usually one or all of the enzymes are present, even when well advanced pathology exists in the pancreas, and when they are permanently absent the feces tell the story very certainly. Qualitative determinations have proved of value in our experience, while quantitative determinations have been of little help.

Recently we had an opportunity to examine two patients with very clear-cut gall-bladder disease attacks. There was in both cases some jaundice, some sugar in the urine, with transverse upper abdominal pain and tenderness in the costal vertebral angles. This seemed to make for a pancreatic diagnosis. In these cases the enzymic activity seemed to be more intense than is usual.

DR. ALEXANDER ARMSTRONG (White Haven, Pa.): I have two questions to ask. As I remember the early teaching in pancreatic disease, one thing was taught—to look for sugar. Since this occurred in neither of Dr. Holtzapple's cases and in his description he said that it was rarely found, I should like to know whether this point has been positively cleared up or whether it was a mistake in our early teaching.

The second question is whether, if we do an operation, it should be done post-peritoneally. I should like to know if that is still in order.

DR. J. I. JOHNSTON (Pittsburgh, Pa.): I cannot add anything different to what has been said. Doctor Litchfield noted a very important thing—that in doubtful cases, especially in acute ones, the abdomen should be opened and the trouble looked for. I believe rather more than the essayist has said, the question of acute perforation and peptic ulcer would have to be stressed still further. However, any conclusion is very difficult. I think the most important thing in acute hemorrhagic pancreatitis is that the patient should have the benefit of an operation for exploration.

DR. IRWIN J. MOYER (Pittsburgh, Pa.): I just wish to mention a case of acute pancreatitis. Several years ago a young fellow, twenty-eight years of age, a thrifty, healthy young fellow, although careless about his eating, came to us. We suspected gastric ulcer. Otherwise he seemed to be perfectly normal.

He was taken sick suddenly with intense pain in the epigastric region. There was no edema or tumor; nothing could be palpated. There were three things, intense pain, rapidity of progress and intense prostration. The pain was out of all proportion to the tenderness. It was not distinctly of the type of gastric ulcer. The pain was not localized. The condition of the vomited material made us suspicious of gastric ulcer. We were at a loss what to do and the disease progressed so rapidly that the patient died five days after the attack began. At no time were we satisfied that operative procedure would do any good. He died and in the postmortem examination we found an intense inflammatory condition that began with the pancreas.

DR. HOLTZAPPLE (in closing): The question was asked whether sugar was present in these cases as a usual thing. It is not present as a usual thing in acute cases. It is never present unless the islands of Langerhans are involved.

In reply to the question as to whether the anterior or post-peritoneal route is employed at operation, the anterior operation is usually resorted to.

The point that I wish to emphasize in this paper is that the medical man should have as complete a knowledge of the symptoms of this condition as the surgeon has of his technique when he operates on these cases.

THE ETIOLOGY OF UVEITIS*

BURTON CHANCE, M.D.

PHILADELPHIA, PA.

The term "Uveitis" will be used, in this discussion, to imply an inflammatory process in any part of the uveal tract. While it is convenient to describe and classify iritis, cyclitis and choroiditis as separate diseases, in clinical practice one must remember that each is a form of uveitis and that there is likely to be accompanying it inflammation of other portions of the tract. It is, in effect, an endophthalmia. The important practical point to be observed is that when inflammation seriously attacks one part of the uveal tract, other parts do not entirely escape, although it does sometimes remain confined to the part first attacked. The particular affection with which this discussion is intended to deal commences, clinically, most usually in the iris and less commonly in the ciliary body, insidiously with little or no signs of inflammation, and continues indefinitely, even for months or years; or, in other cases, with severe signs of inflammation appearing late in the course. By some it is spoken of as iridocyclitis, and by others as "chronic uveitis."

The affection of the individual component of the uveal tract may be considered as either primary, when the original site of the disease is in the iris or in the ciliary body; or, secondary, when an affection of neighboring parts has been transmitted to the iris or ciliary body, as in iritis with ulcer of the cornea. As far as our general information goes, every case of uveitis may be said to be of septic or of toxic origin, although many cases of septic foci are not accompanied by iritis. Indeed, the iris does not seem to be readily accessible to microbic invasion following injuries to distant parts of the body.

The characteristic exudate in chronic uveitis is the deposit of true precipitates on the posterior surface of the cornea, in the aqueous and into the vitreous, consisting of circumscribed, compact, spherical, cellular masses which enclose large nuclei. The cells may arise from the iris, the anterior portion of the ciliary body and possibly from the posterior portion. Pain may be absent when the choroid is the part chiefly affected, because of the absence of the sensory nerves in that portion of the tract. The course

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of the disease varies. In some cases there may be a single attack with early and complete recovery; in others, as those of the "confirmed rheumatic habit," who suffer exceedingly from one or more attacks every year, each attack leaves the eye in a worse state; in others the poison acts with malignant virulence; and in still others blindness in one eye or both immediately supervenes, while others go on to destructive sympathetic ophthalmitis.

The origin of the affection is either exogenous or endogenous, although one must admit that, even by the elaborate and illuminating methods of examination now available, some cases must be regarded as nonbacterial in origin; yet, with few exceptions uveitis or iridocyclitis is not an isolated ocular disease but depends for its development upon microörganisms and their toxins. The symptoms are usually the local manifestations of systemic infection, and may be compared in their elemental aspects to the various connective tissue, muscular and synovial membrane affections. In general terms, as there is a proliferation of the ciliary epithelium, it is probable that the toxic principle acts on the surfaces of the iris and of the ciliary body. The poison, therefore, must be present in the aqueous humor, which it has reached through the blood stream, having been derived from the body fluids as the result of general or organic tissue disease.

Chronic iridocyclitis, as comprehended by our definition, in my own experience certainly has been as uncommon during the first fifteen years of life as during extreme old age. It has been met most commonly between the twentieth and the fortieth years. And it seems to be more common in young women, or in women of middle age or older, than in men. It is more than likely that climate has a distinct influence as an exciting etiologic factor, as more cases have been reported from northern observers than by those in warmer regions, and more during damp seasons than in dry.

The statistics of the frequency of primary uveitis among all classes of ocular disease varies considerably from one per cent. to three per cent. In the great majority of cases the infection is unilateral. Bilateral cases do occur, but commonly such instances are not synchronous in their onset. In my own experience, as my memory recalled case after case during the preparation of this essay, one eye only has been involved, even in the cases manifesting violent recurrences.

We will not consider cases of iridocyclitis resulting from a wound of the corneosclera, nor from the toxemia derived from such wounds, but those cases dependent upon certain of the infectious diseases (excluding tuberculosis and syphilis), of certain internal areas of suppuration and of certain disturbances of metabolism. As ascertained by modern diagnostic aids, the most important factors tending to produce uveitis have been tuberculosis, syphilis, and gonorrhea; rheumatism, and gout, which are steadily being credited with a dependence upon focal infections; the acute infectious diseases such as diphtheria, pneumonia, influenza, epidemic meningitis, malaria, etc.

The association of uveitis, of the type we are here considering, with acute rheumatic fever must be extremely rare. Indeed it might be said practically never to occur; and yet the fact must not be overlooked that purulent matter, streptococci and staphylococci, might, by metastasis, lodge in the globe. In the course of chronic rheumatism, polyarthritis, and more rarely arthritis deformans, iritis does not set in until after the rheumatic arthritis has existed for years.

The etiologic connection between iritis, cyclitis, or iridochoroiditis and muscular rheumatism, the various types of myalgia and polyarthritis is of doubtful importance. It might seem wise, therefore, to discontinue the term "rheumatic" iritis, or iridocyclitis, etc.; and yet, as no satisfactory appellative has been suggested, it is recommended that the term be retained because everyone knows what is meant by its use. It is to be noted, however, that in recent years the search for focal infections throughout the body has been followed by such fruitful results as greatly to have reduced the number of cases ascribed to rheumatism. The so-called rheumatoid forms of uveitis are really manifestations of a toxemia, the nature of which is not yet understood, and the symptoms are but a localized expression of the cause operating throughout the body.

In regard to arthritis, or at least to arthritic pains, iritis may have been found associated, and it is to be noted that the association may be so marked that the increase in the joint symptoms and the excess of the iritic may occur synchronously. Doubtless the same cause which creates the joint affection gives rise to the uveitis, although that cause has not yet been revealed; and, while there may be no visible evidence that these cases have been rheumatic, in my experience they have reacted generally as well as locally to the benefits of the salicylates. Accordingly, it may be accepted as true that affections of the anterior segment of the globe, occurring in the subjects of the various forms of polyarthritis and muscular rheumatism, are but

additional manifestations of the same infection or toxemia which causes the muscular and fibrous tissue pains and lesions. On the other hand, in the absence of definite knowledge concerning the pathogenesis of rheumatism, a more explicit statement as to its causation, the causation of the vital involvement, cannot be made. Rheumatism and rheumatoid diathesis are terms so loosely applied that all forms of septic absorption have been called rheumatic. Just here it might be noted, that while a generalized septic absorption from external necrosis is capable of producing iritis, it does not as a rule produce rheumatism.

Gout: It is rare that one nowadays sees the typical gout so frequently recorded by the practitioners of a previous generation. It is many a day since I have seen any of my elderly friends, rich or poor, in his easy chair with his foot swathed in bandages and propped up on a special foot rest. One finds such extraordinary pieces of furniture deposited in museums of old-time things in increasing number. And, yet the idea is held by practitioners of wide private experience that there is some relation existing between bodily gout and the various affections of the uveal tract with which the victims of that disease are sometimes seized. Nevertheless, because of the mysteriousness of gout, thinking men are inclined to believe that that which has caused the general disease is at the bottom of the affection of the eye also. Still it remains in the minds of many that iridocyclitis in the gouty might, in all likelihood, be caused by, or at least be associated with, the defective nitrogenous metabolism which underlies gout.

Causation of Rheumatism and Gout: The belief that rheumatism and gout are produced by infection rather than by the malassimilation of protein compounds from the food, from which uric acid is produced, has been gaining ground in the minds of pathologists. Besides the fact that uric acid is a normal constituent of the blood, it has been ascertained that the amount is but slightly increased during gout. The deposition of it does not take place until after inflammation, the result of infection with its attendant toxins, has occurred. Instances have been observed of recovery from typical gout, often of long duration, consequent to the removal of foci of infection, as in the teeth and tonsils. So also in rheumatism, bacteria from a focus of infection are disseminated throughout the body in the blood stream, clumps of which block the small vessels about the joints—the joints themselves and the surrounding tissues being involved to greater or lesser degree according to the degree of infection and the virulence of the organisms. Such conditions interfere with the local blood supply and the nutrition of the infected tissues, and the conditions may be aggravated by general malnutrition and loss of tone in the circulatory system. Such, therefore, may be the case when the circulation in the region of the angle at the corneosclera is involved. The effect of colchicum, a remedy which has stood the test of the ages, is not so much that of a specific, as it is that of an accelerator of the circulation, and through the action of that valuable remedy infection is combated because of the increase of white blood cells which are thus brought to the parts affected.

Be all this as it may, we all know of men, and women too, of the full habit, and commonly beyond forty years of age who rather enjoy telling us that they are gouty, as were their fathers before them, who, after a period of unusual eye-strain, or after receiving a slight traumatism, are attacked acutely by the old-fashioned "hot eye." Such cases should always be kept under observation, and it is good practice to remind the individuals that they are "gouty" and insist on their reporting at short intervals for the reviewing of their refraction. And, I need not before this audience dwell long on the thought of the association of glaucoma with gout.

Gonorrhea: Many of the cases ordinarily classified as rheumatic are in reality gonorrheal. The iritis commonly seen in young persons and in early adult life is in many cases dependent upon the gonococcus. One should always bear in mind the possibility of such a cause in the cases of chronic insidious uveitis as it occurs in women; and it would be well to regard relapses of acute serous iritis as attributable to genital blenorrhea, even in persons who have not presented such a history. Gonorrheal iritis is probably not as frequent in private as in hospital practice, yet, because of the extraordinary vitality of the gonococcus which enables it to generate toxins long after the blenorrhea has subsided, it is likely that careful search in cases of baffling uveitis will yield a greater number. Such cases of iritis might be greatly benefited by the treatment of the urethra and other mucous surfaces.

The involvement of the uveal tissues does not usually take place until the active symptoms of the blenorrhea are subsiding. Occasionally at about the time of the onset of the ocular symptoms there may be swelling of the joints and great congestion of the conjunctiva with profuse exudation into the aqueous, sore throat from active tonsillitis, and swelling of the testicles. Such symptoms are undoubtedly dependent upon the extension of the gonorrheal infection.

Moreover, many cases of chronic iridocyclitis accompanied by exudation into the anterior chamber will be found to be of a gonorrheal origin. All other causes being considered, most certainly the gonococcus cannot be excluded from the list of active factors in uveal disease.

Diabetes: It has been my experience to have observed more or less intimately a somewhat large number of diabetics, and yet I cannot recall a case of the so-called diabetic iritis. My private records certainly contain none. Cases supposedly diabetic have been seen in the clinics, yet the relationship of the iritis to the general ill health of the persons was not satisfactorily worked out. The records available have yielded me inconclusive results, and I mention the affection only to include it among the dycrasias which it is believed can and have produced inflammation of the uvea. The formation of boils and carbuncles recurring so frequently in some diabetics may be reasonably considered to be of an infectious nature, and as such may be accepted as the explanation of the occurrence of the iritis; and yet, these two so diverse symptoms might very well be expressions of a common infection. Although iritis must be a most rare complex, at all events, just as in the case of gout, we are not unconvinced that the same cause which excited the defective nitrogenous metabolism and produced the diabetes may not also produce nonbacterial inflammation of the uveal tract.

It is interesting to note, in considering the subject of ocular diabetes, with what rapidity surgical operations on the globes of adult persons who are afterwards discovered to be diabetic, are followed by malignant inflammation of the uveal tissues.

As has been already expressed, the evidence, clinical and bacteriological is in favor of the idea that the majority of cases of uveitis are caused by microörganisms or their toxins. The staphylococcus, as well as the gonococcus, bears a large part in the infections of the iris and ciliary body. The most frequent sources from which the staphylococcus reaches the uveal tract are: chronic septic processes in the mouth (as from pyorrhea alveolaris), in the tonsil, in the nasopharynx, in the accessory nasal sinuses, in the intestines (as from chronic appendicitis), in the uterine cavity, in the skin, and from boils and furuncles.

Pyorrhea Alveolaris: Lawford and Lang, by their independent investigations several years ago, presented conclusive evidence of the dependence of uveitis on pyorrhea alveolaris, the reason for which, it would seem, being the great prevalence of pyorrhea, and also that infection from these cases may be presumed to be direct into the circulation.

There might be said to be seen two types of uveitis dependent upon dental infection. The first is an acute iritis with extension to the ciliary body, accompanied by intense exudation into the tissues and clouding of the sight. Individuals thus affected usually have bad and decayed teeth, and their mouths harbor virulent organisms in great abundance. The other type is seen usually in the cleanly, whose teeth are carefully inspected and treated by their dentists, who doubt the presence of deeper troubles until radiographic examinations disclose apical abscesses and gingival inflammations, the organisms from which possess a weaker virulence than those found in the other class. No specific type of infection appears to act as the causative agent, though usually when the uvea is involved there is a low grade chronic inflammation, which requires radiological study for the determination of the situation of it. This class presents a chronic uveitis confined to the iris with little or no tendency to exudation. The ocular condition may endure for years, at no time affected by any great loss of vision, being marked by relapses and healing after simple treatment.

The groups are found perhaps twice as frequently in women as in men. When the cases are treated early they improve rapidly. The extraction of loose and of impacted teeth will almost miraculously relieve an attack of iridocyclitis which has resisted all other measures. I would call attention to the viciousnes of certain rather popular dental practices. In my experience in these classes of uveodental disease, numerous subjects have had their teeth roots crowned, and many wore bridge prostheses anchored to devitalized and banded stumps. In another group have been those who had had artificial teeth pegged into excavated and bored roots. Neither of these is to be included in those with old broken and buried roots.

The subject of the effect of alveolar disease has assumed such prominence that one unfamiliar with the literature might regard it as a recent discovery. It is well that it has assumed such an importance, for only by that are we able to convince our patients of the necessity of sacrificing their old fangs. It is refreshing to note the modesty of MacKenzie, who so far back as 1845 quietly stated, in his chapters on uveal disease, that "the irritation of a decayed tooth, or stump, communicated through the fifth nerve to the brain, and thence by reflection to the eye, has produced the disease." And again, "In one case which I saw, the irritation arising from a decayed tooth seemed the cause. The

disease declined rapidly after extraction of the tooth."

One might wish to digress for a moment to inquire further into the origin of the pyorrhea and the association of iridocyclitis with it. It must be admitted that the character of the present day food certainly favors dental decay. The chewing of hard and tough fibrous masses tends to stiffen, while soft starchy and sticky food, requiring no mastication, surely relaxes the tissues in the dental sulcus, and decay ensues. Carious and dead teeth are always septic, and as the dental sulci are difficult to drain, morbid particles enter into the surrounding tissues and from thence are propelled into the general circulation, through either the vascular or the lymphatic system.

Tonsils: The association of chronic arthritis with septic infection of the tonsils is now so well known and so sufficiently understood that I need not make more than a reference to it and to ascribe a given case of uveitis to an affectation of the tonsils; for next to pyorrhea alveolaris and perhaps of equal if not greater frequency as a source of origin of iridocyclitis, is chronic inflammation of the tonsils. The process may be identical with that occasioned by pyorrhea. Infectious organisms retained in the crypts of the hypertrophied tonsil excite ulceration, and on being cast off, fragments of highly septic material are absorbed into the blood stream and carried hence to lodge in, it may be, the thyroid, the joints, the appendix, the endocardium, etc. Repeated absorption of more or less attenuated septic fluid, by and by culminates, it may be believed, in inflammation of the iris, the choroid or the sclera. The tonsils and the lympathic pharyngeal ring, therefore, should be investigated in the management of every case of acute and chronic uveal disease.

Intestinal: It has been maintained, even in quite recent years that intestinal auto-intoxication may be largely responsible for many cases of ill health. Also, if, in the course of a vague intestinal trouble, an ocular affection arises, and indican is found in excess, the eye disease, in all likelihood, may be ascribed to such an auto-intoxication. In the researches into the effects of pyorrhea alveolaris it has been noted that affections of the teeth frequently produce disorders of digestion. In cases of uveitis, regarded as dependent upon the absorption of toxins from the intestinal tract, the intestinal contents have been found to be highly acid, the colon bacillus absent, or present in small numbers only, the other organisms Gram-positive in character. Indol and skatol, however, were present in large quantities and in the urine indican to quite a high percentage. That cases do not arise more frequently from alimentary toxemia is due doubtless to the fact that the toxins "undergo the ordeal of the hepatic furnace." It is, however, not to be denied that certain cases are truly intestinal in origin, from an actual focus residing somewhere in that system; for if after a most thorough exploration no focus can be found in the teeth and the tonsils and the case fails to improve under treatment some such focus might readily be suspected, especially if after every indiscretion in diet relapses of an outbreak of serous iritis with an eruption of urticaria follow. Such persons in all probability exhibit an idiosyncracy manifected as a protein sensitization for certain ingested foods.

It is incumbent upon us, when consulted in cases in which indicanuria is a prominent factor, to ascertain the exact state of the dental bodies, because the eye and the intestinal tract might be affected from a common source; moreover, a case of uveitis of dental origin might readily become aggravated by intestinal intoxication.

General Disease: Many diseases and conditions have been brought into etiologic relationship with various types of iridocyclitis, notably the infectious diseases and the exanthemata. With the possibilities of focal infections before us it is difficult to ascribe inflammations of the uveal tract to the specific organisms known to excite the general infectious diseases, excluding of course from this discussion syphilis and tuberculosis.

Few general diseases are without pharyngeal symptoms; and, as dental, rhinopharyngeal and tonsillar infections are so common, it is all the more difficult to decide against the probability that the general disease has aroused a latent focal infection and thus produced the inflammation of the uveal tissues. Such reasoning might very well be applied in the explanation of the occurrence of iridocyclitis in the course of the epidemic diseases notwithstanding the fact that the meningococcus has been found in the lacrimal secretion and in the tissues as well as in the aqueous exudate in cerebrospinal meningitis. And it is this thought which one might hold in reference to malaria; most certainly so in influenza and parotitis. Uveitis has been noted as having occurred in the course of malaria. A number of years ago, I reported a case of marked iritis in a boy who had long been affected by malaria. And yet, the evidence is quite inconclusive that the action of the malarial organism, alone, has produced iridocyclitis. It is indeed a rare complication. So

also might one speak of dysentery which, it is true, is an amebic infection by the bacillus dysenteriae. It might be likened to rheumatism, gout and gonorrhea, in that there are often joint involvements and in the course of which iridocyclitis sometimes become manifest.

It has been assumed by Leber, and others, that an association exists between renal disease and iridocyclitis; and yet, it is indeed so rare that in de Schweinitz's collective investigation only four cases were found.

It will be seen how great is the value of a thorough search for focal infections in the nose and its accessory sinuses, in the tonsils, the buccal mucous surfaces (especially about the roots of the teeth), and the skin, in the pelvic organs (particularly when the uvea is affected during the puerperal state), and in the prostatic and seminal vesicles; also for the origins of gastro-intestinal intoxications.

Remarks, General Pathological: Investigation into the causes underlying the inflammation of the uveal tract, according to Byers, resolves itself into a search for: first, some systemic disorder of which the ocular disturbance is but an expression, as in syphilis and tuberculosis; second, some focus or foci of infection originating the uveitis by means of metastasis. And yet, as de Schweinitz has pointed out, a syphilitic might have a septic area which might not be of specific origin. Further, in the presence of a focal infection the examinations must include those which determine whether or not there is a general infection also; and if, on the removal of one focus, symptoms continue, search must be made for the likelihood of another.

The Pathogenesis of Bacterial Uveitis: It is pertinent to inquire by what pathways infection is transferred to the eye from the foci we have been considering. Anatomically and physiologically it does not appear possible that an infection can spread through the lymph channels. And yet, it is to be noted that dental suppuration is found on the same side as the eye affected; only occasionally (indeed rarely) is it bilateral. Might not the observance of this disposition favor the supposition that the infection is transmitted through the lymphatic channels, if the disease is not extended directly from the diseased osseous cavities?

It is conceivable that toxic matter might be held in the blood in a greater quantity than the individual affected can assimilate, hence there would be created a residuum of toxin in the blood. One should consider all the factors; the toxins prepare the ground and the elements of strain or injury determine the site. A change from the normal occurs in the eye, which causes a decrease in the protective processes of that organ. A strain on the accommodation occurs perhaps, as was so frequently the history in the gouty; or there is a slight ciliary trauma, which is speedily followed by iritis, cyclitis or scleritis. And one must recollect the facts of the intimate connection of the teeth with the maxilliary, the lacrimal and the inferior orbital sinuses, and especially of the intertwining of the various venous plexuses of these regions.

To carry further the analogy concerning the frequency of lesions about the ciliary region or the iris and limbus, it might be thought that such localization might be due to the fact that here, as in the structures about the joints and the more tendonous portions of the muscles, there is a gradation of the supply of oxygen, which thus invites the settlement of bacteria and affords them an opportunity for their growth—an anatomical circumstance which by the same process would create lesions from the circulation of toxic substances derived from matter from septic sources wherever located. Lesions thought to be toxic, therefore, may really be infectious in their nature. Benedict concluded from his studies that iritis of focal origin is really an inflammation of the muscular tissues—a myositis.

The character of the ocular tissues favors the growth of bacterial organisms and the nervous sensibility succumbs to the bacterial toxins. In addition, their abundant blood supply conduces to the lodgment of the bacteria, and from the situations established they thence circulate through the body fluids. At the region of the junction of the iris and ciliary body there takes place in the vascularity of the parts changes from a condition of high degree to one that is comparatively avascular. Here also there is accordingly less hemoglobin and less oxygen, from which depletion bacterial growth actively flourishes. It is easy, therefore, to conceive that infection might be brought to such a region by metastatic conveyance.

The chief organisms obtained from studies of the bacteriological content of matter taken from dental sockets and roots were the streptococcus viridans; in others, the staphylococcus, pneumococcus and bacillus pyocyaneus. In the acute infection there has usually been found a mixed infection, streptococcus viridans and staphylococcus; in the chronic cases, staphylococcus chiefly.

In Benedict's opinion, the organisms found in iritis and in rheumatic affections exhibit affinities for both the eye and the joints and muscles, depending for their manifestations upon the part in which they are located; that is, it may be a

spontaneous expression within the iris or it may be acquired by growing on iris tissue. The affinity of an organism for special tissues may be lost when the organism is grown in different environments, and it may lose its virulence or it may at one time attack the iris and at another time the joints and muscles elsewhere.

It has so happened, in clinical practice, that eyes have seldom been removed for such disease as we have been considering, and the opportunities for laboratory studies have been limited to the examination of material from less vital organs, and to experimentation on lower animals.

From Woods' studies of the effects of bacterial cultures on the uvea of rabbits, we learn that reactions occurred to bacteria prodigiosus, and that the poison generated was not directly due to ferment activity but to a degenerative product formed from the bacterial body and the protein of the culture media through the proteolytic action of the bacterial ferments. The poison, which is a ptomain, when injected intravenously, excited the clinical symptoms observed in the animal.

Rosenow, in carrying on a series of studies on rabbits, injected streptococci obtained from rheumatic subjects, from appendiceal abscesses, pyorrhea alveolaris, suppurating tonsils, etc., which produced acute iritis or iridocyclitis, the lesions consisting of red blood cell extravasations and leucocytic infiltration.

The etiology of only too many cases of chronic iridocyclitis remains obscure although one is inclined to believe them to be of a metastic nature. In the midst of this obscurity one should ascribe greater importance than is given to the consideration of "colds" as a factor in the metastasis of any latent morbid agents throughout the body. So, again, one might plead, that because the complaints of the rheumatic are exaggerated in cold damp weather it would appear advisable to retain the name rheumatic iritis at least a little longer. And, as there are cases, the so-called "idiopathic," in which a definite specific cause cannot be ascertained, which depend on general disease at present unknown to us or are of obscure infections, the term may be continued to express our ignorance. Yet in the light of present day research it should be used no longer.

It has not been the purpose of this presentation of the causation of uveitis to consider the probability of a given case being the subject of tuberculous or of syphilitic infection, although the importance of either or both of these as etiological factors in any or all cases has not been overlooked. No case which seems to be obscure should be allowed to go without the systematic tests for these two classes of infection and the possibility of their presence should be constantly maintained in our minds.

This essay is based on the classical communications of Fuchs and de Schweinitz on the Pathogenesis of Chronic Uveitis, at the Section of Ophthalmology of the XVII International Congress of Medicine, London, August, 1913, and a survey of the literature since that date. I have not burdened my listeners and subsequent readers with the voluminous bibliography which has accumulated during the past decade, for such can be obtained in the issues of the "Ophthalmic Year Book," and in "Ophthalmic Literature."

DISCUSSION

DR. LEWIS H. TAYLOR (Wilkes-Barre): It is quite customary, in opening the discussion on such a paper as the one we have just heard, to compliment the essayist and say that he has so thoroughly covered the ground that there is but little to be added. I do not mean to follow the stereotyped plan, but if I did say this, it would be eminently true. To say that the paper was prepared by Dr. Burton Chance is all we need to know that it was thoroughly done. Dr. Chance presents many points for our consideration and I shall not attempt to discuss them all but merely to stress one or two points and present, if time allows, the consideration of three recent cases only, which I think may properly be regarded as having some bearing on the subject before us. I know Mr. Chairman, the subject is "Etiology of Uveitis," and that we are not allowed to discuss treatment nor anything else extraneous, but if I mention treatment I hope you will not call me down until you have a chance to see whether it has any bearing on the etiology itself.

The cause of the trouble being known in any disease the remedy should follow naturally, and hence a search for etiology of disease is most important. But this is not always easy and the extent and thoroughness of Dr. Chance's paper rather appals us when we think of the many avenues through which we must search to find the real cause of the trouble. Sometimes, however, it is very plain; and yet even so, is often overlooked in our anxiety to give relief at once and sometimes overlooked in our search for preconceived causes of certain diseases.

Someone has said the patient comes to find out what ails him and why. This may sometimes be true but in general what the patient wants is to get well, no matter what the cause of the trouble. In fact he very often wants to conceal the real trouble.

From many that might be cited, I want to refer very briefly to three cases, two of which have very recently come under my care, and the third only a few years ago. G. P., aet. 46, came to me May 6, 1922, in great distress, saying he had been under treatment for two weeks without any relief from almost unbearable pain in his left eye. Examination showed keratitis in the lower half of the cornea and iritis, atropin failing to dilate the pupil. I, of course, at once put him under atropin and dionin and sought for the cause later. On May 8th he was decidedly better but the iritis was still severe. He had a very badly decayed eye tooth on the left side and I advised its removal. This was done the same day and two pus sacs found at the root of

the tooth. From this time on the recovery was rapid, pain and inflammation subsided, and by June 1st the patient was well. Dr. Chance has laid stress on the importance of the teeth as factors in the etiology of iridocyclitis and we should always consider this factor in any obscure case of this trouble. It will not always do to take the patient's statement that his teeth are all right. An x-ray examination should be made in every doubtful case. In the one I have just cited no x-ray was necessary, because the hopeless condition of the tooth could be seen at a glance.

I should like to mention a second case because of its bearing on compensation. One of my colleagues left town for a vacation on July 31st, and asked me to look after a patient whom he had seen a couple of days earlier and who had received a slight corneal injury in his work. Instead of healing, as such wounds readily do, severe inflammation followed. When I took the patient in charge I found a severe iritis developing. Atropin, dionin, leeches and mercury were necessary to subdue it, and it was several days before the pupil could be dilated and the eye at all comfortable. I treated him for two weeks, when he was turned over to his former doctor in fairly comfortable condition though not yet fully well. The patient stated also, that he had a similar attack of eye trouble twenty years before. This is interesting in present compensation days. This man was laid up for several weeks. How much of his trouble was due to the slight trauma and how much to something inherent in the man himself? Dr. Chance has mentioned trauma as a factor. Will a slight corneal wound set up an iridocyclitis? No, not ordinarily; and yet in a patient ready to have such a disease it may be the match to start a serious conflagration.

The subject is a large one, and a whole afternoon might be devoted to it. One could bring up from his experience numerous illustrative cases for many of the factors mentioned in the admirable paper that we have heard, but I want, if I may have time, to mention one more because of its obscure etiology.

I think there is a tendency in most of us to regard iritis as in some way associated with syphilis, and whether we are sure of it or not we give mercury in some form. I do, at least, for as pointed out by Dr. Marple some years ago, mercury is helpful with iritis whether associated with syphilis or not. Someone divides the world into three classes: those who have had syphilis, those who now have syphilis, those who will have syphilis.

In July, 1919, a patient was brought to me from a neighboring town, with a severe case of keratitis and iritis, bringing a letter from a physician in Brooklyn who had treated the patient for three weeks. He stated that he had had two Wassermann tests both negative, but he felt that the whole human race was remotely affected by syphilis and was giving this patient potassium iodid in increasing doses. The patient was 31 years old, married, mother of two healthy children. Both eyes were badly affected. She was perfectly honest and would gladly coöperate in finding the cause. She had spent a year or two in India and knew about syphilis and perfectly willing to answer any questions as to her life and her husband's. I will not attempt to detail all the treatment, for it was long continued and ended in perfect recovery. On August 27th we discontinued the iodid and in spite of negative tests and negative history, began injections of salvarsan. These were given by Dr. McClintock as a therapeutic test. The eyes gradually cleared, though at first she was almost entirely incapacitated. Her husband was in government employ which took him to different parts of the country, and after a few months she went with him to the South. I had her continue the iodid and sent letters to other oculists where she expected to be. I saw her at intervals for two years in which she continued the iodid up to December, 1921, when it was discontinued. The result was a perfect cure and I fitted her with glasses giving normal vision. I saw her last in January of the present year, apparently perfectly well. No syphilis could be determined and yet syphilis must have been the causative factor.

I should like to add my word to Dr. Chance's on the importance of a general medical knowledge in investigating these cases. He and others have mentioned constipation, indigestion, malaria, though I don't believe it causes uveitis, and other causes. When we think of the whole subject, choroiditis, iritis, iridocyclitis, descemetitis, it behooves us to search for various causes and to remember that we have a patient to consider rather than a disease, and beyond the apparent and readily discernible trouble there are many general conditions that must be taken into consideration before we find the true cause of our patient's trouble. I like the expression of the essayist when he says: "The term idiopathic may be retained to express our ignorance." In spite of our care there will be some causes that escape our scrutiny and we just call them idiopathic and let them go at that.

Dr. Edward B. Heckel (Pittsburgh): I want to congratulate Dr. Chance on this very splendid paper. He emphasizes the fact that the etiology and treatment are separate subjects. We sometimes search for causes in these cases and can not find anything except disordered general metabolism.

I have in mind a young lady who was under treatment for some time for uveitis. All examinations were negative and it was decided that she was suffering from a general metabolic disorder. She was put on the atrophine treatment and after four months she made a good recovery.

We frequently have difficulty with patients when we want their teeth x-rayed; so many patients object to an examination of the teeth. This is very important since, unless a radiogram is made, the very tooth which is at fault may escape attention; or there may be some cause which is not manifested during the ordinary examination.

Dr. George W. Carr (Wilkes-Barre, Pa.): It may be of interest to this section to know that the case which Dr. Taylor reported in his discussion of this paper was a compensation case and covered by compensation insurance.

Slight as the injury was, the insurance company took the view that the iritis might have been caused by the injury and paid the claim.

Dr. F. B. Harding (Allentown, Pa.): I saw a case some time ago which bears out the case Dr. Heckel mentioned, that of a young man, 25 years of age.

When he came in for treatment a Wassermann was taken which was negative. One taken two weeks later was also negative. He saw a very good physician and had the gonorrheal infections ruled out. We had the prostate looked over several times to be certain of this fact. No tonsil infection was found. He did not improve and on questioning him further I found he had an office job and ate very irregularly and mostly of pastry. The next and last thing was the gastro-intestinal function as a source of irritation. With that in view we made some cutaneous proteid tests. Strange to say he reacted very promptly to the ordinary wheat

test. With sugar and wheat ruled out of his diet he promptly got better. Up to this time specific treatment had seemed to make him worse and was discontinued. I have seen him several times since that date and whenever he eats pastry or does not attend to his bowels he has a slight return of his ocular trouble.

DR. CHANCE (in closing): When the invitation was given me to present a comprehensive dissertation on the etiology of uveitis, I thought the load was a pretty heavy one because the field is so very wide. The amiable secretary said I might use my own judgment as to the length of the paper, but later, after I had written some forty pages, more or less, he wrote that only fifteen minutes had been allotted me.

I have tried to be reasonable in my attitude toward the etiology; the subject is a very wide one. One should always bear in mind that syphilic infection can be at the bottom of vague symptoms, and when a case of pronounced syphilis presents itself, one should endeavor to pay the same attention to the other aspects of the case as one would in a case not so infected. The teeth should always be examined in any case of uveitis, and one should never be satisfied with the mere say-so that they are all right. Diseased teeth which are apparent to anyone as being the cause of ill-health should of course be treated or extracted; yet I make an effort, sometimes going with the patient, to have a careful radiographic study made.

The case of a lady comes to my mind, whose bridge prosthesis had for a long time given her trouble. Her dentist did not think that it could be the cause of her eye troubles, yet careful radiographic studies showed that the two molars on the side of the affected eye, to which the bridge was anchored, were diseased, and on which, after the extraction, large pus sacs were found. Within ten days her eye was free from disease.

The part that teeth play in the production of uveal disease is truly most important, nevertheless we must not have sound teeth pulled.

Much might be said of the metabolic cases, but the time is too short. Why should a healthy young man eat only pastry? Probably because he can't chew solid food, on account of the condition of his teeth.

The possibility of an injury setting up a latent disease should be given every consideration in these days of damage suits. I think, however, that with the means we now have at hand, the laboratory, the physical tests, etc., we should be able to arrive at some method of relieving patients suffering with uveitis, and thus prevent the damaging recurrences so commonly recorded.

PRACTICAL POINTS ON CATARACT EXTRACTION*

JOHN B. CORSER, M.D.

SCRANTON

When one considers the age and infirmities of a large number of those afflicted with lens opacity, with the attending difficulties and mental distress caused by a journey far from their homes, it is at once evident that there is something to be said in favor of developing ophthalmic surgeons in our smaller medical centers. It is not, therefore, the purpose to present an exhaustive paper on cataract extraction but to consider the subject from the standpoint of an ophthalmologist practising in a small community.

In looking over the literature on cataract extraction so many radically different methods of operation are advocated that one is at a loss to decide which method to adopt. Naturally, the easiest and safest operation giving a good result is the one to be chosen by the surgeon whose experience is necessarily limited. It is hoped that the discussion of the subject from this standpoint may develop some facts which will be of service.

In order to open the discussion, this paper will give the method that we have followed for some years.

In the preliminary examination of the patient, attention is given first to the eye and its adnexia. The conjunctival sac must be free from inflammation and tear duct normal in its function. If diseased, these parts are brought to the best possible condition, which may even require removal of the tear sac. The nasal cavities are examined. It is desired that the cataract should be mature but, under certain conditions, immature cataracts are operated. Light projection and ocular tension are recorded. The ophthalmoscopic examination of the better eye often reveals the condition of the vitreous and fundus of its fellow. The heart, kidney and blood condition is examined and the digestion considered.

At this time, the patient is placed in a recumbent position and the lid manipulated and washed with boric acid solution to gain the confidence of the patient. Instruction and training is given to close the eye as though going to sleep. This last is repeated many times until the patient learns to close the eye without strain. When practical, the patient is seen two or more times for the purpose of this training and the operation is not performed until the behavior is satisfactory. A thorough bowel movement is required the day before the operation.

It is our custom to operate in the morning before attempting any other line of work. When the patient enters the hospital, the face is washed with soap and water. One hour before the appointed time, one drop of one per cent. atropine solution is instilled in the eye to be operated.

We have found it no small advantage to have these patients attended by our own nurse, who uses tact in allaying the mental perturbation that is usually found in those to be operated.

The patient is quietly taken to the operating room on a cart. Care is given to make the

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operating table as comfortable as possible and an effort is made to divert the patient's mind from the seriousness of the occasion.

The face and lids are washed with soap and water and wiped with sterile gauze saturated with one to three thousand bichloride solution, special attention being given to the lids and cilia. The conjunctival sac is flushed out with boric acid wash and a drop of one per cent. atropine solution instilled. Two drops of cocain are instilled in each eye and the same repeated in the eye to be operated every four minutes for four more applications. With the second application a subconjunctival injection (two drops of one-half per cent. cocain solution) is made just below the corneal limbus.

Artificial illumination from the ceiling is used and the patient so placed that when the light is fixed the eye is in a favorable position for operation. In addition, oblique illumination from a hand searchlight has been found most convenient.

The usual corneosclero incision is made, preferring that the incision be in the cornea rather than in the sclera and that the wound be free from jagged edges. Conjunctival flaps have not been found of particular advantage. It is desirable that, after the eye is transfixed, the knife be held flat (parallel with the limbus) and care given that the cutting edge does not dip downwards as the incision is made.

The iridectomy is then performed if a preliminary has not already been done, the patient being warned that a pin prick might be felt at this time. The speculum is then removed and the upper lid retracted by an assistant, using a Smith's lid elevator.

It is difficult to overestimate the value of a trained assistant during the whole operation.

A broad transverse incision through the upper third of the lens capsule is made with a Knapp's cystotome and the lens expressed by pressure at the lower limbus and slight pressure downwards at the upper. All, or a part, of the lens matter remaining is washed out with warm boric acid solution, using a small rubber syringe (ear and ulcer) fitted with a metal nozzle. We prefer to leave a part of the cortical lens matter rather than prolong this washing. The rubber syringe must be thoroughly cleaned as well as sterilized before using so that no rubber particles be left in it.

The conjunctival sac is cleared of debris and the corneal wound examined for tags of capsule or lens matter. Atropin is instilled, the lids are closed, and bichlorid ointment (one to three thousand) lightly smeared over the cilia and lid margins. Dressings are applied over both eyes and the patient moved to the bed, which is made as comfortable as possible.

In spite of care in the position on the operating table and later in bed, pain in the back is much more frequent than desired but can often be relieved by changes in the position, especially in the raising of the head and shoulders after the first twelve hours. We have, of late, given our patients much more latitude in movement and position than formerly but care is exercised that no pressure be made on the operated eye.

The experienced and tactful nurse is, here again, of great help and is a big factor in allaying the worry and anxiety of the patient.

The eyes are not disturbed until the morning of the fifth day, unless pain in the operated eye is complained of and, in our last forty cases, the operated eye has not been exposed during the first four days. After completing the examination and toilet of the eye, atropin is used and dressings are again applied to both eyes until the next day, when the unoperated eye is left open. The operated eye is dressed daily and left open after seven days, if the wound is free from marked irritation.

Secondary operations on the lens capsule are necessary in the great majority of cases and usually performed one month or more after the extraction. This procedure, which is considered rather lightly by most textbooks, is not as simple and free from danger as it would seem and will always be a point in favor of the extraction of the lens in capsule.

It was my intention to take up some of the complications following cataract extraction, but I believe that phase should be left to masters of the subject, who can speak with authority, and will therefore limit the scope of this paper to the type of operation best suited for the average ophthalmologist.

The brilliant results obtained by the Smith and Barraquer operations and their modifications are attractive to all, but we believe that the average ophthalmic surgeon should first develop a safe method requiring less operative skill and experience, giving satisfactory results, until such time as the larger number of more experienced men have tried out and settled on one of the methods of removing the lens in capsule.

Now, as to results of operations. Statistics, as to visual results, are often misleading and, unless the previous condition of the eye is well understood, it is difficult to determine the effect any form of operation will have on vision. In other words, the resulting vision is often in-

fluenced more by the previous ocular condition than by the type of operation used.

Any operation for the extraction of the lens, without accident and without subjecting the eye to marked inflammation and which leaves a clear cornea with average amount of astigmatism and a pupil which allows an unobstructed passage of light rays, should be favorably considered. Vision will depend on the vitreous and integrity of the fundus.

In concluding, I would again mention:

1. The training of patient before operation.
2. Preliminary iridectomy, when practical.
3. The desirability of operating by artificial light.
4. Subconjunctival injections of one-half per cent. cocain solution.
5. Leaving the first dressings in place for four days, if no untoward symptoms develop.
6. A desire to stimulate discussion, which may help determine the safest and most sound operation to be performed by the average ophthalmic surgeon.

DISCUSSION

Dr. Leonard G. Redding (Scranton, Pa.): This operation in small communities is a problem of considerable interest to me, and I have come to the conclusion that the answer rests with the men themselves. A patient's first question after a diagnosis of cataract is usually, "Who do you think would be a good man for me to have operate?" Sometimes he will consent to have you do it. I think that the men in small communities have not been operating because one failure will do more harm to the operator than can be counteracted by half a dozen good results.

I am glad to see that Dr. Corser has stuck to the old method. I had the good fortune to sit beside Barraquer in the International Conference in Washington and heard him read his paper on his method of operation, and it was most interesting. However, I feel that if I had to have the operation done on my own eye, I would want it done by the old method.

Another thing which should be included in the after treatment is the fitting of glasses. A cataract case treated but not properly fitted with glasses is one of the worst cases that comes into a doctor's office.

Dr. Lewis H. Taylor (Wilkes-Barre, Pa.): I was in Minneapolis two weeks ago and heard a paper by Dr. Green of San Francisco on the infiltration method of anesthesia.

He sinks deep into the orbit through the lower lid and up through the upper lid and all around everywhere, injecting cocain for local anesthesia. It seems to me a perfect absurdity. I sat beside him two days later in Rochester and he said that he and his brother found this method very valuable, especially in the Barraquer operation. It may be a good thing for them but I believe that the method described by Dr. Corser is perfectly acceptable and the proper sort of thing for a cataract operation.

Dr. Corser brought out one point about the patient being ready for the operation and then having to wait a few minutes. Years ago, way back in the eighteenth century, in writing on this subject of cataracts, Baron Wenzel said: "It is well to wait a few moments until the patient becomes absolutely quiet." I have noticed this with some excellent operators; they are all ready but they wait a moment to encourage the patient and get him over the period of nervousness.

In regard to the place of operation, I always operate with the patient in bed. Years ago, in McCarty's hospital in London I saw beds with removable head pieces which could be readily taken off. From that time on, I never operated in any other way. I invariably operate with the patient on the bed in front of a window or else by artificial light; I think it is important not to disturb the patient in any way after operation.

Dr. George H. Cross (Chester, Pa.): I always feel when the subject of cataract and cataract operations comes up for discussion that everyone has his own ideas and individual viewpoint on the method of operation and technique. Dr. Corser referred in his paper to the difficulty in securing a trained assistant. I think the best way is not to depend on an assistant at all, or only in a minor capacity. It is very easy for one starting cataract operative work so to train himself that he can get along without an assistant.

Concerning the Doctor's objection to the conjunctival flap: this, I feel, is a very useful procedure and is of great assistance in coapting the margins of the incision, and in healing fast (as it does in such a short time) is most valuable in preventing loss of the contents of the globe from accidental trauma.

Personally I have had very little experience with the infiltration method of anesthesia, but after seeing Prof. Barraquer use it in three or four cases, I was very much impressed and think it a most excellent method. If you can take hold of a lid and have it immovable, it certainly takes a lot of responsibility and worry off your shoulders. I am going to try this method. It seems a great advance in cataract extraction.

Little things at times are of greatest help in putting a patient at ease, viz., the rule after operation to see that the patient is questioned when back in bed as to his wants—whether he desires one, two or three pillows, etc.

I believe with Dr. Taylor that a few words of encouragement to the patient are of great help and aid in relaxing nervous tension.

Dr. Luther C. Peter (Philadelphia): Dr. Corser has outlined a very practical and sane method of procedure in cataract extraction. Exception might be taken to a few methods adopted by the essayist. We all have quite definite ideas in reference to the technique of cataract extraction. In the matter of anesthesia, we have been in the habit for some years past, of using narco-anesthesia, which consists of the administration of 15 grains of sodium bromid and 10 grains of choral hydrate, two hours and one hour before the time of operation, 1/6 grain morphia and 1/150 atrophin by hypodermic, one half hour before the operation. This method brings the patient into the operating room sufficiently quiet to be indifferent to his surroundings and yet sufficiently wide awake to respond to the surgeon's instructions. A few cases have been nauseated by the morphin; in one instance we were obliged to postpone operation until the second day because of the nausea. This, however, is exceedingly rare.

As to the lid anesthesia, we have followed Barraquer's method with favorable results. Two c.c. of a 1½ per cent. solution of novocain are injected under the skin to the outer corner of the eye, the needle being directed first upward, then downward, then finally across the base of the lower lid. This eliminates largely the effort on the part of the patient to squeeze. It also increases the anesthesia. The patient rarely knows when the operation begins or ends.

The method of treating the anterior capsule is most important. It is our custom to employ first a cystotome to incise the anterior capsule. Sharp capsule forceps are then introduced and the anterior capsule, in the pupillary space, is removed entirely. After the lens is extracted, any soft cortex or blood which remain are removed by free irrigation with normal saline. There is no harm in the use of irrigation if properly and carefully practiced. Needling for an after cataract is rather rare in our experience.

In regard to the dressings, we are quite free to admit that it requires an unusual amount of courage to leave the eye closed for five days. A case operated on about a year ago by Colonel Smith was unfortunately allowed to remain closed according to his instructions for seven days. When the dressing was removed, the anterior chamber was filled with blood, the iris was prolapsed and recovery was imperfect because of the subsequent iridocyclitis. In a case operated on by Dr. Barraquer, in which the first dressings were removed at the end of one week, the anterior chamber also was filled with blood, and the patient made a very prolonged and tedious recovery. Some of these patients are phlegmatic and do not complain of pain, even though it may be present. It is always a safe plan to remove the dressings at the end of 48 hours to note the condition of the lid, the presence of swelling and an excessive amount of secretion. If an infection is present, early treatment is most important.

DR. CORSER (in closing): Concerning Dr. Taylor's suggestion of operating in bed, I approve of this but we have not the conveniences for doing it and I think it better to follow one line of procedure than to mix them.

In two cases I have tried the infiltration of the orbicularis palpebrarum nerve supply to prevent blepharospasm, recently popularized by Barraquer, and I need to learn more about it because only partial paralysis resulted.

I saw one case operated on in Philadelphia by this method and the paralysis of the muscle, in that case also, was not satisfactory.

Concerning morphin and other drugs used to quiet the patient, I have given these up because of the nausea and vomiting which occasionally follow.

POSITIVE WASSERMANN TEST IN A FATAL CASE OF ESTIVO-AUTUMNAL MALARIA

This case is reported by Guthrie McConnell, Cleveland (*Journal A. M. A.*, April 21, 1923), because of the control of a positive Wassermann reaction by necropsy in a case of malaria, that clinically showed no evidence of syphilis in spite of the history of infection. The necropsy, however, disclosed very definite syphilitic lesions of the aorta, with involvement of the aortic leaflets.

SELECTIONS

DIABETES AND LIFE INSURANCE*

HENRY J. JOHN, M.D

CLEVELAND, OHIO

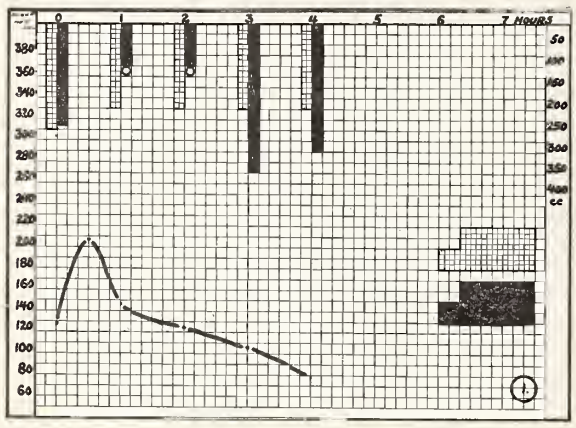
If sugar is found in the urine in the course of an examination for life insurance, the application is promptly refused, even though the applicant is apparently in the best of health. This is a general rule of all insurance companies, with the exception of the Canadian companies, since long experience has shown that diabetics are a poor risk. Nevertheless, to reject an applicant because of glycosuria, without any further investigation, is often both unjust to the individual and unprofitable to the insurance company, since glycosuria of nondiabetic origin is present in a considerable percentage of individuals. In our series[1] the percentage reached 13.8, proving that nondiabetic glycosuria occurs frequently enough to be considered in diagnosis.

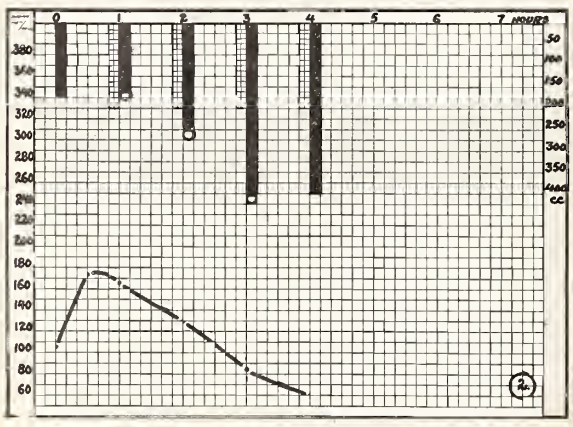
When urinalysis reveals a glycosuria, the only definite statement that can be based upon the presence of glycosuria is that the kidneys are permeable to sugar. For further information regarding the possible significance of the glycosuria, a determination of the sugar content of the blood is required. If in the fasting patient a high blood sugar content is found we may be sure that the patient is a diabetic. If, however, the blood sugar lies somewhere between 90 and 138 mg. per 100 c.c. the diagnosis is not so clear-cut. In many cases of early diabetes the kidneys have a low permeability; therefore, in such a case it becomes necessary to determine whether glycosuria with a low blood sugar content is due (1) to renal diabetes, or (2) to true diabetes.

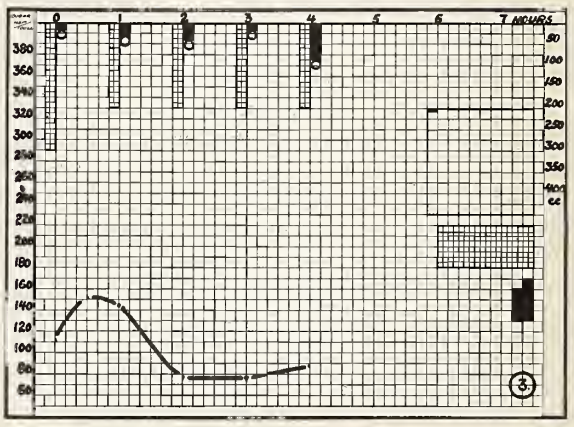
Since the blood sugar content of any diabetic can be brought to a normal level by fasting or a low diet, it is necessary to employ a further method of diagnosis—the reaction to carbohydrates. If the individual is a nondiabetic, he will handle the carbohydrates well; if he is a diabetic, the carbohydrate metabolism will be retarded, the degree of retardation depending on the severity of the disease. The glucose tolerance test, therefore, is the final means whereby the diagnosis of diabetes may be definitely established. After a fasting blood sugar determination, the individual is given 100 gms. of anhydrous glucose in water by mouth, after which blood sugar determinations are made at the end of one-half hour and one, two, three and four hours, respectively. The urine is ex-

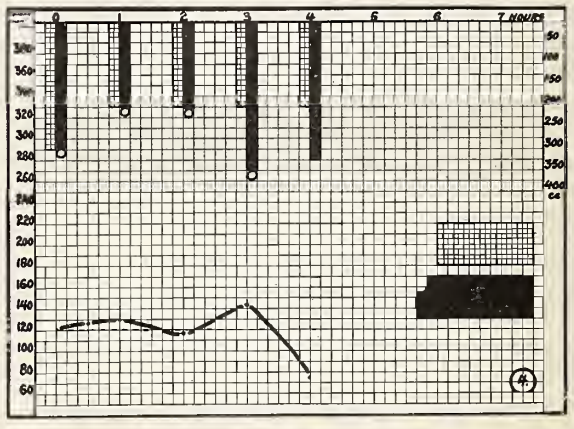
*From the Cleveland Clinic, Cleveland, Ohio.

amined at the same intervals for glycosuria. If the individual is a nondiabetic, the first determination will show a normal blood sugar content (120 mg. per 100 c.c. or less); the blood sugar will increase abruptly, the highest point being reached at the end of the first half hour, with a rapid return to normal content within one or one and a half hours. In a typical case of diabetes, the increase in the blood sugar will be slow with an equally slow decrease, so that the normal level will not be reached for from six to nine hours. These are typical pictures, of which there are many varieties.









Regardless of glycosuria, any case is considered to be normal, in which the blood sugar returns to the normal level (120 mg. per 100 c.c.) within three hours after the ingestion of 100 gms. of glucose. *Regardless of glycosuria,* any patient in whom hyperglycemia persists for more than three hours should be considered as a diabetic. We believe that the carbohydrate tolerance test is the only sure method by which a differential diagnosis between diabetes and nondiabetes can be established. Since glycosuria denotes permeability of the renal filter, and that only, it follows that when the blood sugar content is reduced below the level of kidney permeability, then no sugar will appear in the urine even though the blood sugar content be as high as 350 mg. per 100 c.c. or more. On the other hand, the level of permeability may be as low as 53 mg. per 100 c.c.[2] This low level of permeability appears in many individuals whose carbohydrate tolerance is normal, in whom there is no question of diabetes. Certainly life insurance should not be denied to these individuals.

The accompanying curves show the carbohydrate metabolism of certain individuals who consulted me because they had been refused life insurance on the ground that they had glycosuria and therefore were diabetics. Thus, eight cases are included among my total series of 158 cases in which glucose tolerance tests were made. Among these eight there were 2 diabetics (25 per cent), one prediabetic (12.5 per cent) and 5 nondiabetics (62.5 per cent). Thus, by their present inflexible ruling the life insurance companies refused five good risks and one fairly good risk.

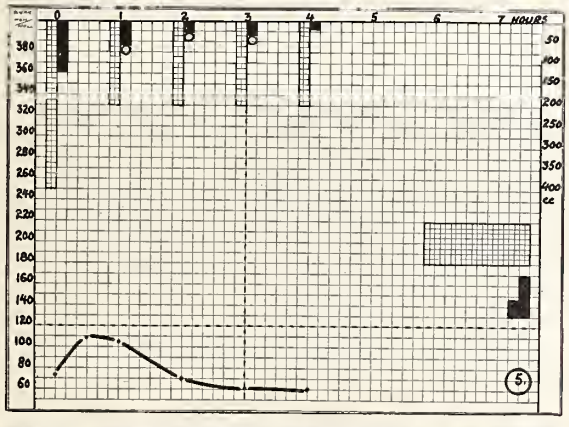
EXPLANATION OF CHARTS.

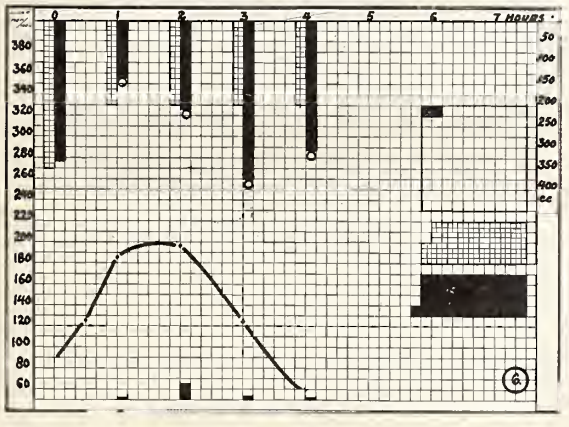
The checkered columns at the top of the charts indicate the water intake; the solid black columns at the top indicate the urine ouput. The total intake and output during the period of four hours or more is indicated by a like marking at the lower right corner of the chart. The circles at the bottom of the black columns indicate the presence of sugar in the urine.

The broken horizontal line opposite "120" is the normal level of blood sugar, i. e., 120 mg. per 100 cc. of blood. The broken vertical line opposite "3 hours" indicates the period within which, in normal individuals, the blood sugar content again becomes normal after the ingestion of the standard dose of glucose. The heavy curve represents the blood sugar content at the designated periods. The dots which break the glucose tolerance curve indicate the intervals at which blood was taken for sugar estimation. Each solid black column at the bottom of the charts represents the sugar content of the urine output indicated by the corresponding solid black column at the top of the chart. Each square included in these lower columns represents one gram of sugar, and the total sugar output—the sum of these

squares—is indicated by the solid black portion of the large square at the right of the chart, which includes 100 squares, representing 100 gms. of glucose—the total sugar intake.

Case 1, a Jew, aged 34, married, a plumber by trade, of good habits, with a negative family history. Nearly two years before I saw him, this man had been pronounced a diabetic by a life insurance examiner because sugar was found in his urine. His family doctor referred him to an internist who made a glucose tolerance test which showed a perfectly normal curve. Nevertheless, the diagnosis of diabetes was repeated and antidiabetic treatment was prescribed which the patient had followed ever since. When this man consulted me on January 25th, 1922, I advised a glucose tolerance test, not knowing that one had been made before. The resultant curve is given in Chart I.

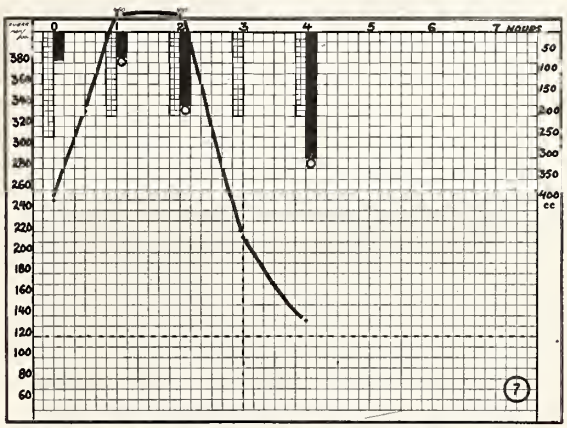


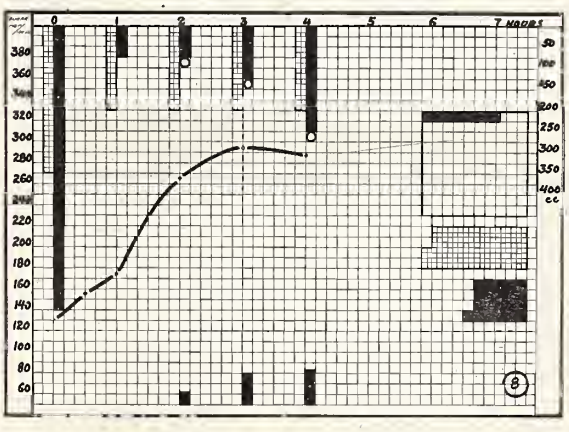


This shows a good carbohydrate tolerance—certainly not a diabetic condition. Sugar appeared in the urine when the blood sugar content was at 146 and at 125 mg. per 100 c.c. Following this test I placed the man on a forced carbohydrate diet for a week, asking him to eat all the starchy food, cakes, pastry, candy, etc., he could, to see if this would raise his blood sugar. At the end of the week the blood sugar content was normal. This final test supported the findings of the carbohydrate tolerance determination, and demonstrated that the man was not a diabetic, his glycosuria being due to a permeable renal filter. Up to the present time the patient has had a full diet and his blood sugar has remained normal. To know that he is not a diabetic has lifted a tremendous burden from his mind.

Case 2, a man, aged about 50 years. This patient had taken out various insurance policies and no question had ever been raised about his physical condition until the fall of 1917, when he made application for a $10,000.00 endowment policy, due at the age of 65 years. The examiner reported the presence of sugar in the urine, but the applicant, feeling certain that some mistake had been made, put himself in the hands of a laboratory clinician, and after numerous tests, in none of which was a trace of sugar found in the urine, insisted that the company reopen the case. He went to the Home Office of the Company and was examined there, undergoing different tests which included test meals. On his return to Cleveland he was reëxamined and the policy was finally issued to him.

In May, 1921, this man was solicited by a representative of another company. but declined to take additional insurance. However, within a few days of this solicitation the company's examiner appeared to make a physical examination. As a matter of courtesy the examination was permitted but the policy was





never taken out and the medical findings were never reported to the patient.

In August, 1921, application for insurance in still another company was made by the patient. This examination was perfectly normal in every respect, but nevertheless, the Home Office on receiving the papers declined the risk because of "a recent finding of sugar in the urine." The only possibility for such an unfavorable report, apart from the difficulty in 1917 which was cleared up, was the examination in May regarding which the applicant had no information whatever. Since this rejection further laboratory tests showed absolutely no trace of sugar in the urine. In none of the tests has there ever been any record of glycosuria except in the two instances mentioned above. This man had never taken any treatment whatever, nor had he in any way restricted his diet because of the alleged glycosuria and he felt satisfied that the condition did not exist.

This man's family history is entirely negative. He is a very active business man and as far as he knows has always been in perfect health. The Wassermann

reaction was negative. The glucose tolerance test (see Chart II) showed a normal tolerance of carbohydrates. Glycosuria was present but this glycosuria denoted only the condition of the renal filter.

Case 3, a salesman, aged 34. The patient's father died of diabetes; one brother has diabetes and a paternal uncle died of diabetes. The patient has had typhoid fever, grippe and gonorrhea, but no operations.

In May, 1921, he applied for life insurance. Sugar was found in his urine and he was promptly refused. A glucose tolerance test (Chart III) showed a normal curve, a good carbohydrate tolerance, although glycosuria was present throughout, even when the blood sugar content was 77 mg. per 100 c.c. The normal carbohydrate tolerance shows that this man should not be considered a diabetic simply because he has a diabetic family history and has glycosuria. Such a case never will develop diabetes unless some intercurrent condition affects the pancreas and thus produces diabetes.

Case 4, a clerk, aged 22. His family history is negative. He has had typhoid, grippe and occasional attacks of tonsillitis. He has been rejected by an insurance company because of sugar in his urine and told that he had diabetes. This naturally has preyed upon his mind to such an extent that he has begun to develop all kinds of imaginary symptoms and complaints.

The glucose tolerance curve (Chart IV) of this patient shows not only a normal, but a strong tolerance for glucose, the curve itself being practically a straight line. In other words, this man is burning up the glucose and storing it as fast as it gets into the circulation, thus not giving it a chance to accumulate and rise in the blood stream. Nevertheless glycosuria appears throughout.

This case possesses what we may consider as 100 per cent efficiency in the utilization of carbohydrates. This man, therefore, is a perfect risk for insurance as far as any question of diabetes is concerned; nevertheless, he was turned down and told he had diabetes on the evidence of urine examination alone.

Case 5, a university professor, aged 46, single. The family history is negative and the patient has no complaint. On a recent application for life insurance he was refused, being told that he had diabetes because of sugar in the urine.

The glucose tolerance curve (Chart V) shows a very strong tolerance for glucose—a 100 per cent efficiency in utilizing carbohydrates. Glycosuria is present—a meaningless glycosuria. This man is a perfect risk as far as diabetes is concerned, yet he is refused and as the record states that he is a diabetic, he will be barred from all other life insurance companies.

Case 6, a Jew, a motion picture director, aged 55 years, married; family history of no importance. His only illnesses had been typhoid at the age of 20, and slight attacks of rheumatism and of ague in childhood.

He had applied for life insurance two years before he consulted us and had been promptly refused because of sugar in the urine. He was on a diet, as a result of which the glycosuria disappeared, and he then passed the life insurance examination with flying colors. Since that time he has been on a somewhat restricted diet, and lately has been losing weight. His glucose tolerance curve (Chart VI) shows an incipient lack of utilization of carbohydrates, since it takes three hours for the curve to return to the normal level, and sugar was present in the urine throughout the test.

This condition is what I call the "Prediabetic Stage."[3] While this man is not a normal individual as far as his utilization of carbohydrates is concerned, nevertheless, by adhering to the proper diet (which in this case is very liberal) he can remain in the prediabetic stage and will not develop diabetes. As long as he remains a "prediabetic" he is as good a risk as anyone. The only danger in cases of this type is that they may grow careless, and cease to adhere to the necessary diet and to repeated checking by means of blood sugar estimations and thus may drift into diabetes.

Case 7, a Jew, 35 years of age, a druggist, married. The family history is of no interest. Sugar was discovered in the urine when he applied for life insurance examination and he was promptly refused.

The glucose tolerance curve of this man (Chart VII) indicates a definite diabetes. Notwithstanding this, at the beginning of the test, when the blood sugar content was 250 mg. per 100 c.c., there was no glycosuria. The kidney permeability, therefore, is at a high level. It is a well known fact, described by Folin[4] and others, that on the descent of the blood sugar curve glycosuria appears even at 136 mg. per 100 c.c. If a heavy carbohydrate meal is given to a patient of this type, sugar will appear in the urine; but if the diet is restricted for a time there will be no sugar in the urine.

In this case then, in contrast to the preceding case, the sugar in the urine did indicate diabetes. It was, however, entirely by chance that the insurance doctor examined this patient when glycosuria was present, i. e., at a moment when his blood sugar content was high. Had the patient eaten moderately for a couple of days, or fasted for a single day, there would have been no sugar in the urine and the applicant would have passed the examination easily, in spite of the fact that he is a diabetic. This case again shows clearly the fallacy of basing an opinion on a urine examination alone.

Case 8, a school boy, 18 years of age, a physician's son. The family history is of no importance. He had kidney trouble, brain fever, grippe and pneumonia in childhood. When he was 16 years of age he had scarlet fever followed by a tonsillectomy.

In November, 1921, he applied for life insurance and when sugar was found in the urine was promptly rejected as a diabetic. Since that time he has been intermittently on a somewhat restricted diet, and most of the time his urine has been sugar-free.

A glucose tolerance test on this patient shows a definite diabetic curve which continues to rise at the end of the third hour and just begins to decline at the fourth hour. No sugar appeared in the urine until the blood sugar reached 265 mg. per 100 c.c. In other words, the kidney permeability is at a high level.

In this case the assumption that sugar in the urine meant diabetes happened to be right, as was proved subsequently. Yet, in this case again, as in the one preceding, had the applicant fasted the day before his examination, his urine would doubtless have been sugar-free and he would have passed the examination for life insurance, in spite of the fact that he would be a bad risk.

There is no doubt that because of the presence of glycosuria, insurance companies are

turning down many hundreds of cases that are very good medical risks. Thus the companies are losing thousands of dollars annually, and many perfectly normal individuals are being denied the privilege of providing for their families.

On the other hand, these same insurance companies are accepting many cases which show no glycosuria, but nevertheless are definitely diabetic.

We were led to believe in the past that the percentages of cases of glycosuria without diabetes, and of diabetes without glycosuria were insignificant, but such is not the case. In my series of 714 observations,[5] 13.8 per cent showed glycosuria, with normal blood sugar; and 18.3 per cent showed no glycosuria, with hyperglycemia. In basing the diagnosis of diabetes on urinary examination alone the possibility of error is therefore 32.1 per cent.

I have spoken of the ease with which a diabetic can render his urine sugar free. He can go a step further. He can also bring his blood sugar to normal by a low diet. There is one thing that he cannot do. He cannot change the type of his glucose tolerance curve, which is stable and therefore discloses his true condition.

CONCLUSIONS

1. Diabetes cannot be diagnosed by urinary examination alone.

2. Even blood sugar estimation does not suffice in all cases to establish the diagnosis of diabetes unless it is known that the individual in question has not been on a limited carbohydrate diet.

3. Glucose tolerance estimation establishes definitely the carbohydrate utilization of an individual.

4. Renal permeability for glucose must not be interpreted as true diabetes. The differential diagnosis must be established by the glucose tolerance test.

5. The present discrimination against people who show glycosuria should be abandoned by the insurance companies and the profession, and true diabetes should be accurately diagnosed by means of glucose tolerance estimation.

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4. Folin, Otto J., and Berglund, H.. J. Biol. Chem,. 1922, li, 213.
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Euclid Ave. at 93rd St.

"So your father is ill. I hope it is nothing contagious."

"Gee! so do I. The doctor says dad is suffering from overwork."

OPHTHALMIA NEONATORUM*

NEW FACTS REVEALED FROM A STUDY OF REPORTS

LOUIS LEHRFELD, A.M., M.D.†

PHILADELPHIA, PA.

It is very interesting to know, after years of practical application of preventive methods, just what has been achieved, more especially in those fields where legislation has been enacted to curb the spread of disease and to minimize the damage caused by it. In the case of ophthalmia neonatorum, which is well recognized by the medical profession as a dangerous infection destructive to the eyesight, and even known to enlightened laity as a preventable disease, statistics of recent years show that this infection is still a prevalent one and contributes a large proportion of the blind population in this country.

In 1918, I made a survey for the Department of Public Health of Philadelphia of the cases reported the preceding year (1917) with the view of ascertaining if the law requiring such report was influential in reducing the number of blind cases among children resulting from this infection. Seventy-one cases reported during 1917 were investigated. Of this number, reasonably accurate data were obtained from 49 cases. The remainder were not located or the information not satisfactory. Two cases resulted in complete blindness in both eyes, one in partial blindness of the right eye, two in disturbance of vision, as evidenced by small maculations in the left eye, and one of the same degree in both eyes.

END RESULTS OF OPHTHALMIA NEONATORUM CASES—1917

Opacity of Cornea		*Number of Cases Occurring*
Slight—¼ surface	Both eyes	1
	Left eye	2
Moderate—½ surface	Right eye	1
Extensive—¾ or entire surface	Both eyes	2

The measure of degree of blindness was rather arbitrary, as the amount of corneal opacity was taken as the index of destruction of vision. Since these cases were observed by an experienced public health nurse, they may be considered as reasonably correct.

Further study of the 49 cases showed that six were really not ophthalmia neonatorum since they occurred in persons at the ages of one year, two years, five years, eight years, nine years and twenty-five years. I cannot explain why the latter were reported by physicians as ophthalmia neonatorum. Bacteriological examination showed that the gonococcus was present in 16 cases and absent in three. No smears for studies were

*Read before the Philadelphia County Medical Society.
†Assistant Surgeon, Wills Eye Hospital, Philadelphia.

made in the remaining cases. Forty-three cases occurred, however, during the first month, of which nineteen occurred during the first three days, eight on the fourth day, one on the fifth day, one on the sixth, six on the seventh, and eight at various periods from the second to the fourth week.

DAY OF OCCURRENCE OF DISEASE (1917)

	Cases		*Cases*
At birth	7	First month	1
Second day	4	First year	1
Third day	8	Second year	1
Fourth day	8	Fifth year	1
Fifth day	1	Eighth year	1
Sixth day	1	Ninth year	1
Seventh day	6	Twenty-fifth year	1
Tenth day	2		
Eleventh day	1	Cases	49
Twelfth day	1	Unknown cases	4
Fourteenth day	1		
Third week	2	Total cases	53

STUDY OF CASES IN 1919—PHILADELPHIA

No analysis was made of the cases in 1918; but since that date, when venereal diseases other than ophthalmia neonatorium were made reportable, a more thorough study of each case has been made by the Bureau of Health.

During 1919 there were reported 60 cases, of which 27 were gonorrheal and 33 negative or non-gonorrheal. Those which were of positive Neisserian origin are as follows:

Color	White	17
	Black	10
Sex	Male	10
	Female	17
Eyes infected	R	8
	L	4
	Both	13
	Unspecified	2
Birth attended by	Physician	21
	Midwife	6
Reported by	Physician	6
	Institution	9
	Nurse	9
	Midwife	3
Incubation in days	1	7
	2	8
	3	3
	4	3
	5	3
	13	2
	Not stated	1
Prophylactic	Used	20
	Not used	7

STATISTICS, 1920

During 1920 there were reported 82 cases, of which 35 were positive for the gonococcus, and 47 were non-gonorrheal. The following is a compilation of the total cases:

		Gon.	*Non-Gon.*
Color	White	21	31
	Black	14	16
Sex	Male	18	21
	Female	17	26
Reported by	Physician	16	11
	Hospital	7	2
	Visiting nurse	9	33
	Institution	3	1
	Midwife	0	0
	Anonymous	0	0
Eyes infected	Right	7	12
	Left	6	3
	Both	22	32
Prophylactic used	Silver	16	16
	Argyrol	4	3
	Unspecified	2	
	None used	13	18
Source of infection	Birth canal	27	0
	Mother	0	4
	Nurse	0	0
	Patient	0	1
	Other persons	0	0
	Irritants	0	18
	Undetermined	8	24
Births	Physician	32	40
	Midwife	3	7
Smears	Positive	35	
	Negative		47
Treatment	Hospital	13	6
	Home	22	41
Incubation in days	1	5	9
	2	6	5
	3	5	4
	4	9	5
	5	4	3
	6	2	2
	7	1	3
	8	2	6
	9	0	1
	10	0	3
	11	1	2
	Over 11	0	4

STATISTICS, 1921

There were reported 84 cases of ophthalmia neonatorum, of which 33 were gonorrheal and 51 non-gonorrheal in type. The accompanying table represents a comparative compilation of the gonorrheal and non-gonorrheal types.

		Gon.	*Non-Gon.*
Color	White	20	27
	Yellow	1	0
	Black	12	24
Sex	Male	14	23
	Female	19	28
Reported by	Physician	11	12
	Hospital	9	2
	Visiting nurse	11	37
	Institution	0	0
	Midwife	2	0
	Anonymous	0	0
Eyes infected	Right eye	1	16
	Left eye	4	5
	Both eyes	28	30
	Unspecified	0	0
Births	Physician	22	45
	Midwife	11	6

		Gon.	Non-Gon.
Smears	Positive	33	
	Negative		51
Treatment	Hospital	21	7
	Home	12	44
Incubation in days from birth	1	3	14
	2	6	5
	3	7	9
	4	1	4
	5	4	6
	6	2	2
	7	1	3
	8	3	1
	9	1	1
	10	2	2
	11	1	2
	Over 11	2	2
Prophylactic	Used	22	42
	Not used	10	6
	Unspecified	1	3
Drug	Silver nitrate	16	31
	Argyrol	5	8
	Unspecified	1	3
Day of disease treatment instituted	1	14	29
	2	7	12
	3	4	5
	4	1	2
	5	5	1
	6	1	0
	7	0	1
	Over 7	1	1

DEDUCTIONS FROM STATISTICS

The textbooks state that the average incubation period of ophthalmia neonatorum is three days. Fuchs claims it is rarely 4 or 5 days, and that cases occurring after this time are infections from soiled linens, hands of the nurse or mother. It is true that a large proportion of cases occur during the first three days, but there is positive evidence that the incubation of primary cases may be as long as two weeks. This may be accounted for by the fact that the use of a prophylactic may inhibit the growth of organisms, or that the gonococcus in genitals of the mother may be of low virulence. If these late cases of ophthalmia neonatorum were secondary, caused by infection from hands and linens, then why is it that gonorrheal ophthalmia practically never occurs in the nursing mother. Why should the baby's eyes be the choice of its development after delivery? It is reasonable to believe that secondary cases of infection may occur, more especially in institutions for infants where the disease may spread from one child to another by faulty nursing technique, but I am firmly convinced that ophthalmia neonatorum is essentially an infection from the birth canal.

The use of strong solutions of silver nitrate, say 2% or even 1%, is always attended by a more or less inflammation of the lids and conjunctivae which may mask the symptoms of an oncoming true ophthalmia, or may be mistaken by the nurse or physician, as a sign of infection. Since only a scant majority of cases occur during the first three days, it is essential that the prophylaxis be such as to combat also the late cases. I, therefore, suggest as a health measure the use of a prophylactic less irritant than silver nitrate and one which can be used over a period of at least three successive days. The use of one drop and one instillation of any medicine gives a false sense of security and safety. As is often the case, the one drop of silver nitrate, as commonly used, never reaches the cul-de-sacs of the conjunctivae because of the slippery condition of the lids of the newborn, or because the physician or midwife does not know how to make eye applications. If the Credé method is a positive method, why are there so many cases of ophthalmia following prophylactic instillation? A thorough and safe sterilization is more assured if the eyes are treated on several occasions rather than once, followed after each instillation by flushing the eye, using a large bulb eye syringe with boric acid or salt solution in preference to a medicine dropper.

It was commonly believed by health officials that ophthalmia neonatorum occurred largely in the practice of midwifery. In Philadelphia it is significant to note that 32 out of 35 positive cases reported in 1920, and 22 out of the 33 in 1921, occurred in babies delivered by physicians. A more startling fact is that a prophylactic was used in only 20 instances out of 35 in 1920, and in 22 instances out of 33 cases in 1921. If such omission occurs among the actual gonorrheal cases, there must necessarily be a large number of the 43,000 babies born annually in this city who do not receive this all-important prophylactic treatment. The physician who fails to use this recognized preventive is certainly guilty of negligence.

BLINDNESS FROM OPHTHALMIA NEONATORUM

It is the desire for the prevention of blindness that has caused the enactment of legislation providing for the reporting of ophthalmia neonatorum. In spite of our prophylactic measures, which have in the main been beneficial in curbing the spread of this disease in hospitals, yet it continues to prevail in small but positive numbers and blindness continues to result from it, as may be noted in the census of the schools for the blind.

NEW MEASURES ADVOCATED

I personally believe that more rational measures must be adopted for the prevention and treatment in order to reduce the prevalence of blindness caused by ophthalmia neonatorum.

(1) All expectant mothers should be under the care of a physician, a nurse or a health organization doing prenatal work. In the experience of the Division of Child Hygiene of the Bureau of Health, Philadelphia, not one case of ophthalmia neonatorum developed in 18,000 births during the last five years.

(2) The prophylactic toilet of the eye should be changed from one instillation and one drop of a strong silver nitrate solution to several drops of a bland but effectual antiseptic (such as 25% of argyrol) and repeated on three successive days after birth, followed by thorough flushing with a large bulb syringe.

(3) Every physician and midwife should be held to account for failure to use a prophylactic within 24 hours after birth. The number of cases of gonorrheal eye infections of the newborn which do not receive a prophylactic at the birth is much greater than generally supposed and these are cases under the care of physicians.

(4) To the birth certificate may be conveniently added a supplementary report as to the presence of sore eyes. This would give the health official immediate and more accurate information as to the prevalence of this disease.

(5) Reported cases should be followed up by the health authorities with the view of ascertaining if proper treatment is being given, and until the disease has terminated. This should be especially stringent among the colored race, which according to the last three reports of the Bureau of Health, contributes proportionately one-third of the true gonorrheal cases.

A summary of the statistical information collected is as follows:

(1) The average incubation period of ophthalmia neonatorum is three to seven days, but may be as long as two weeks.

(2) One instillation of any prophylactic is not a positive protection against the disease.

(3) A large proportion of the newborn do not receive any prophylactic instillations.

(4) Secondary infections of the gonorrheal ophthalmia are not common. A large number of the non-gonorrheal type are due to irritating prophylactics used in the eyes.

(5) Blindness from ophthalmia neonatorum has not been reduced to satisfactory proportions by the present methods of prevention, treatment and control.

It behooves the medical profession to adopt more effective measures of control and prevention of ophthalmia neonatorum, since the children blinded by the disease are living monuments of ignorance and neglect, and are proof of the failure on the part of the profession to eliminate this absolutely preventable disease.

1337 Spruce St.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

PITTSBURGH MEDICAL REVIEW—AN EARLY MEDICAL PUBLICATION

Dr. W. W. MACLACHLAN

In 1886, Dr. X. O. Werder founded the *Pittsburgh Medical Review,* as he considered the time was ripe for the establishment of such a medical enterprise. He, therefore, called together a small group of young physicians and surgeons who readily accepted his ideas and forthwith the Review was organized. The original group was composed of Drs. X. O. Werder, Peter McGough, J. J. Green, Adolph Koenig, J. J. Buchanan, Chas. S. Shaw and Thos. L. Hazzard. They represented the editorial board, the publishers and the financial backers.

The *Review,* costing one dollar a year, was published monthly, and was not unlike the present *State Journal* as to size. It was well edited, one may say fearlessly edited.

As time passed, the personnel of the editorial board changed, but its policy remained unaltered. Drs. Hazzard and McGough resigned and Drs. Pettit, Painter and Watson were added. From 1892 to 1897, following the reorganization of the editorial board, Dr. Adolph Koenig assumed complete control of the *Review* without any deviation from either its original ideals or policy. He carried the financial burden alone until 1897, when the *Pittsburgh Medical Review* became the Pennsylvania Medical Journal, the first state journal in America. Dr. Koenig retained the editorship for a number of years (and too much credit cannot be given to him for his unselfish work). It may be of interest to know that this transfer cost the State Society the sum of one dollar.

The founders of the *Review* by no means attempted its publication without due thought as to the policy that was to guide all its activities. The primary object was to supply a vehicle whereby the members of the medical profession of this community could publish the results of their work. It was also the desire to have all the then known laparotomies reported and a table compiled, so that as this operation was done, a complete list could be kept on record. The list was not for this city only, but for the whole surgical world. We must remember that at that time the opening of the abdomen was a somewhat rare event. Ethical medicine was to

be upheld at any price, and in the advertising pages there was to be no sign of any secret or patent medicine.

The original articles in the early years are of more interest and it would appear that the more important are of a surgical nature. This is probably due to the fact that operative surgery was then coming into the foreground and that there were several very active young surgeons developing. The names most frequently seen are R. W. Stewart, X. O. Werder and J. J. Buchanan. It is of some interest to know that Werder was doing ectopic gestations in 1886. Stewart's articles were chiefly on g.u. surgery, while Buchanan's covered the wide field of general surgery. Howard Kelly contributed articles written while he was still in Philadelphia. Dr. Sutton had several papers on obstetrical and gynecological subjects.

In medicine, one can name but a few of the many writers. J. Chris Lange published a number of articles on a fairly wide range of medical subjects. They were well written and showed considerable philosophy. He wrote an interesting article on "Puncture of the Abdomen for Tympanites." It seems strange to us now how he avoided peritonitis. Adolph Koenig wrote on Pharmacology and Therapeutics, while Ayres, McKennan, Diller, Shaw, Burleigh and Moyer contributed medical subjects. There were four or five articles written by a Dr. George Hay—not our incoming president—which, to say the least, are very amusing and original.

Dr. Hay had the misfortune to have lost an eye and was a man of peculiar appearance. He was a man with a very scientific mind and of very bitter philosophy—a cynic of the most pronounced type. He was a chemist of very great ability, and many abstruse chemical problems were presented to him by the steel companies of that day, and he was called as an expert in poisoning cases.

In an article on "Deleterious Beer," he introduced his subject in this somewhat racy manner: "Let the fact be widely known and let fanatics make the most of it—I drink beer. Let there be no mistake about it however, I am an Edinburgh man, a temperance man, I don't drink too much beer. But I am of the opinion that when beer is sold to me it ought to be good beer, beer manufactured from malt and hops, and ought to contain no injurious materials."

In an article called "Milk Minus Cream," he further raised the question as to what became of the cream in the milk that was sold. In those days milk was drawn from a large can with the spigot at the bottom, the cream naturally rising to the top. Eventually, however, the cream would be drawn from the spigot, if the laws of physics were correct. Hay never was fortunate enough to get any cream and he wondered what became of it.

In a rather long article on "Who Are Quacks," he writes in a very tart manner on what he considers quackery in medicine. But probably his most astounding endeavor was a lengthy discourse on "The Economic Disposal of the Dead." This matter was certainly handled in an original style. He suggested three methods; Cremation, Boiling and Distillation. They are given in considerable detail and probably the following quotation gives most accurately an insight into his philosophy of life: "Sentiment must be got rid of if ever we are to arrive at sense in this matter. A nominal sum might be paid to the relatives of the deceased for each body handed over to the boiling establishment, which would be somewhat of a consolation for the loss of the living man or woman (if, indeed, such were really a loss), while the manure, after being manufactured as above indicated, would yield a handsome profit, after paying all expenses. But this method of treating dead bodies would completely abolish the business of the undertaker, the hearse with its "nodding plumes," and all the paraphernalia of woe would be things of the past on which account the method, with its manifest and manifold advantages is likely to meet with strenuous opposition from the quarter indicated. The young gentleman, when the dance is over, may lead his partner to the buffet and may there assist her to cake and wine and sandwich, the materials for producing which were nourished by the ammonia from the soft tissues of his grandfather and grown upon the bones of his grandmother."

His last article on "Natural Gas Fires and Health" was a plea to make gas fires more sanitary. The question was put to him whether the gas was in the process of manufacture then "in the bowels of the earth." His reply was that the earth, like corporations, "had no bowels."

The abstracts and reviews of foreign journals were very well done. They were well chosen, usually the advanced work which had some clinical bearing. They were not limited to a few lines. Pfeiffer's original article was reviewed shortly after the 1890 epidemic of influenza. Similarly, everything of moment in American medicine got its just dues. The county society meetings were reported in detail and some of the discussions are most interesting;

for example, the use of calomel in diphtheria. Drs. Lange and Green reported giving 120 grains daily for a few days without purging or salivation. Dr. Lange also stated that he had given a young boy 500 grains of calomel in 10 days without purging or salivation, or other ill effect. He maintained that this was almost a pathognomonic sign of diphtheria—tolerance for calomel.

The editorials were from the pen of Thos. S. Shaw. He wrote on many subjects which today are still important. He advocated strongly clinical clerking in the teaching of medicine, the establishment of dental dispensaries, the need of preventive medicine.

At the time of the *Review,* it was the only medical journal printed that in its advertising sheets did not carry patent medicine advertisements. It happened that the *Journal of the American Medical Association* did. What scathing remarks Shaw turned loose on the Journal! This was an almost continuous war until at the end the *Journal of the American Medical Association* was forced to change its policy. There is good reason to believe that the *Pittsburgh Medical Review* is responsible for the change.

The following editorials had reference to the *Journal of the American Medical Association:*

"The *Journal of the American Medical Association* is not a private enterprise. It is the property of the members of the body whose name it bears and it is conducted by men appointed for that purpose and paid for their services. Consequently, this publication is legitimately open to criticism and it invites and deserves censor for a course of procedure that touches the honor of the association that it represents."

"The plea of financial necessity cannot be urged, because this journal is supported by members of the Association and its existence is not dependent on the income from its advertising pages."

"The paper hardly rises above mediocrity and it reflects little credit upon the gentleman who conducted it and upon the association it represents. Then if we cannot have excellence, let us at least have honesty; if we cannot have brilliancy, let us at least have decency."

"If the jewel of consistency is to remain in the possession of the American Medical Association this abuse will be noted and it will be corrected by the unequivocal action of the association at its next meeting in Chicago."

"That monument to the honor and humanity of American medicine, the code of ethics, contains certain wise restrictions that must sorely try the patience of those who, for pecuniary gain or for popular notoriety, devise so many ingenious plans to violate the spirit of the code, while the letter is preserved."

"The most conspicuous of these violators of the spirit is of course the *Journal of the American Medical Association.* The inconsistency of this paper, at whose head stands one of the foremost of American physicians, and one who took an active part in the formulation of the code, has become a reproach to the body it represents."

"The brazen impudence of the *Journal* in upholding the code of ethics for the guidance of other people, while constantly violating it in its own conduct, passes understanding."

RENAL GLYCOSURIA

DR. R. R. SNOWDEN

The condition spoken of as renal glycosuria is characterized by the constant presence of glucose in the urine, a normal blood sugar and absence of the signs and symptoms found in true diabetes. It is a condition that has been generally recognized only recently, due in large part to the fact that its diagnosis rests primarily upon the blood sugar findings.

The frequency with which such cases are now being recognized indicates that renal glycosuria is fairly common. At present the pathological basis for this condition is not understood and indeed it is not much more than a surmise that it is the result of some renal change.

Cases are reported that have been accurately studied and observed for from 10 to 17 years without showing any change for better or for worse. Cases are also known to many clinicians, by observation or hearsay, that are said to have had "sugar diabetes all his life, ate everything, always will and died of old age." It is very likely, then, that true renal glycosuria is a condition that is innocuous.

The difference between diabetes mellitus and renal glycosuria is the difference between day and night. If it is the former, the patient has a very dangerous condition and must undertake the most rigid and radical regime, directed most painstakingly, with the highest degree of medical skill; and even then the prognosis is doubtful. On the other hand, if the condition is renal glycosuria, it is very likely that the patient can practically disregard the condition.

A study of those cases presented in the literature by reliable men indicates that the diagnosis

should rest on certain criteria, accepted by all. These criteria are:

1. A normal blood sugar and normal curve in the glucose tolerance test.

2. Freedom from clinical signs and symptoms of diabetes mellitus, such as loss of weight, hunger, thirst, etc.

3. The excretion in the urine of true glucose, in amounts which are, in a broad way, independent of the carbohydrate intake.

4. Accurate observation over a sufficient length of time to indicate that there is no change toward a true diabetes mellitus.

An interesting point is the apparent familial tendency, the condition being found in several members of a family. On this basis it has been advanced that renal glycosuria is congenital and can be inherited.

PARALYSIS OF THE SIXTH NERVE COMPLICATING OTITIS MEDIA; WITH REPORT OF CASES

Dr. J. R. SIMPSON

During the year 1920, there occurred in the service of Dr. Day at the Eye and Ear Hospital, two cases of inflammation of the middle ear accompanied by ipsolateral paralysis of the sixth cranial nerve and severe pain in the head and face.

Gradenigo, an Italian Otologist, in a paper in 1907 first called attention to cases of purulent otitis media with severe frontal and parietal pains and abducens paralysis, and since then this group of symptoms is known as Gradenigo's syndrome.

Case 1: Mrs. M. C., aged 72, was first seen at the office on August 22, 1920. She gave a history of trouble with the right ear for five weeks, severe pain in the right upper jaw and frontal region which was almost unbearable and at times she complained of seeing double.

On examination there was found a profuse purulent discharge from the right ear, the perforation being in the antero-inferior quadrant, no mastoid tenderness, and inability to rotate the right eye outward.

On September 4, 1920, Dr. Day did a simple mastoid operation. He found areas of necrotic bone covered with granulation tissue rather extensively distributed, with here and there a bead of pus. There was seen a large cell deeply placed anteriorly and several extending upwards towards the middle fossa. A special effort was made to reach the deep cells. The lateral sinus was exposed for a short distance, its color being of normal appearance.

Culture from the wound showed streptococcus mucosus capsulatus. W.B.C. 14,200, polys. 86%, small 12%, trans. 20%.

Following the operation some pain persisted for four (4) days, after which she felt quite comfortable. She left the hospital at the end of two weeks, the paralysis showing some improvement and there being no more pain.

Case 2: J. S., a boy, aged 9, admitted to Eye and Ear Hospital on March 7, 1920, with a history of "flu" beginning seven weeks before, followed by severe headache and trouble in the left ear.

On admission there was found acute suppuration of the left middle ear and mastoid, paralysis of the left external rectus, and, signs of meningitis.

The boy was operated upon on the day of admission, extensive necrosis of the mastoid cells being found.

Lumbar puncture gave a clear fluid showing 19 cells per c.mm., 50% being polys. and 50% lymphocytes. W.B.C. 22,000.

His convalescence was slow. He remained in the hospital five weeks, and during this time frequently complained of severe pain in the left frontal region. The temperature ranged between 99° and 103° during the first week.

Gradenigo accounted for the paralysis of the abducens by calling attention to its isolated course in relation to the apex of the petrous portion of the temporal bone and the occurrence here of a localized pachy- or leptomeningitis.

CARDIOSPASM WITH ESOPHAGEAL DILATATION

Dr. E. W. ZURHORST

Passage of the food begins with the voluntary swallowing act, but when the bolus of food arrives in the upper esophagus it is carried down to the stomach by involuntary contraction waves. This dilatation wave is transmitted to the stomach to permit the admission of food into the stomach, while the contraction surrenders to the pace-maker of the gastric peristaltic waves which at the cardiac end of the stomach originate at the rate of about twenty per minute.

There are many cases of intermittent hypertonic cardia, corresponding to the spastic states of the stomach and pylorus, in which the patient feels constriction at the level of the lower sternum. It is common for normal individuals to experience such after rapid drinking of ice water. This mild cardiospasm is a reflex condition and creates a desire to obtain relief by swallowing, thus causing a relaxation wave to pass over the cardia. In hypertonic states of the pylorus and stomach, either associated with pathology or reflex from pathology elsewhere along the digestive tract (principally the duodenum, gall-bladder and appendix), the cardia is frequently involved, but in these the condition is of longer duration and relief is obtained through the act of belching. Belching is under control

of the will but it is difficult to resist when the patient knows it will give him temporary relief. When the patient makes the statement that belching is difficult it means simply that he makes several swallowing efforts before he can relax the cardia. The gas is belched forth only when the cardia remains open sufficiently long for the contraction of the stomach to send it back.

Coincident with persistent obstruction offered at the cardia there is developed a dilatation of the lower esophagus to accommodate the food retained. There are many cases of cardiospasm without dilatation, but why so few cases evidencing various grades of spasm develop stenosis with dilatation of the esophagus is rather difficult to comprehend.

Twenty-eight cases of cardiospasm have been analyzed for this study; two were carcinoma of the lesser curvature of the stomach in the cardiac portion but not involving the cardiac ring, twenty-two cases were intermittent cardiospasm without dilatation, and four were spastic stenosis with esophageal dilatation. Of the two cases of carcinoma, one was a woman of fifty-four years who had had dysphagia for one year, the other a man of seventy-four years who had had symptoms for eight weeks. Neither of these patients had dilatation, in neither could an Ewald or Rehfuss tube be introduced into the stomach, in both esophagoscopy showed spasm but no evidence of pathology, and on first x-ray examination the diagnosis of carcinoma of the stomach was not made in either case. It was only on repetition of the x-ray examination, following failure to obtain improvement, that the diagnosis of carcinoma of the cardiac end of stomach was made. Very careful examination of patients in the cancer period is necessary, since spasm of the cardiac ring may be a very early symptom when the pathology is high up in the stomach, and furthermore, instrumental dilatation may be disastrous if the cardiac ring itself is involved.

Of the twenty-two cases without dilatation thirteen were males and nine females. This is a group of young individuals. The age incidence of the males was thirteen to sixty-one years, average thirty-three years; the females seventeen to thirty-nine years, average twenty-five years. Pathology associated with this group was alcoholic cirrhosis of liver, gastric ulcer, valvular heart disease, hyperthyroidism (two cases) chronic mucous colitis (two cases).

The four cases of spastic stenosis all showed a marked dilatation of the esophagus with capacity of about a quart. Two of these cases were women and two men; their ages were forty-one, forty-two, forty-three and forty-four years; duration of symptoms three, four, seven and twenty years. The weight of three patients at onset is known, 195, 210 and 212 pounds. The physical state of these patients is very different from those reported by Jesse S. Myers from which he made his deductions that the condition is associated with the asthenic enteroptotic type of patient in which there is a congenital neuropathic predisposition.

The symptoms in all these cases are similar, loss of weight (average sixty-three pounds), difficulty in swallowing, feeling of something lodged behind the sternum, eructation of gas, regurgitation of food and mucus throughout the day but particularly after meals. Only one patient had vomiting of large quantities. Two patients had a cough which had been present during period of symptoms and was relieved by treatment. It was not possible to elucidate a definite determining cause in any case.

The method of treatment has been relief of the distention of the esophagus and gradual instrumental dilatation of the stenosis. The patients are put to bed and allowed nothing by mouth for a period of about ten days. Glucose enteroclysis, 500 c.c., with deodorized tincture of opium, 2 c.c., is given two or three times daily. The mouth and teeth must be kept clean. Until there is sufficient relaxation to permit the bougie to pass readily into the stomach the dilators are introduced through the esophagoscope. Clear view of the insertion of the dilator into the cardia is important, as otherwise the tip of the bougie may not find the cardia and simply be projected against the esophageal wall. Dilatation is performed every day or every second day, at first using a woven linen dilator and as more relaxation is obtained, passing increasing sizes of the metal olive bougie attached to a whale bone. After several weeks the esophagoscope may be dispensed with. After ten days, feeding of these patients is begun, giving at first semiliquid diet and after a few days soft diet, thoroughly masticated and eaten slowly. About the third day after commencing dilatation, medication directed toward relief of the spasm is given by mouth: sodium bromide in fifteen grain doses four times daily, and tincture of belladonna, commencing at fifteen drops three times daily, increasing the dose one drop daily until the patient evidences the drug effect. The dose is then continued at several drops under this dose.

In one patient, Mr. R., a duodenal feeding tube was passed into the stomach immediately after dilatation and the patient was fed milk through it. The tube was removed preceding each dilatation. This procedure is more satisfactory than the prolonged fasting method and would be of considerable advantage in the treatment of patients who have become emaciated from prolonged starvation.

The duration of treatment in hospital has been from three to five weeks. When dilatation has progressed to the stage that a number forty olive bougie is readily passed, the patient is instructed how to perform the operation and when he has acquired the ability he is discharged from the hospital with instructions to pass the bougie daily and to report back at intervals for examination.

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EDITORIALS

WE MUST OBEY THE LAW

Laws are man-made and as such are subject to frequent changes according to the needs and conditions of the times. Laws have for their basic principle the effort to prevent crime, to correct evils and to mark out a line of action, which must be followed by the individuals of the community affected by such laws. From time to time the lawmaking process affords an opportunity to witness the multitudinous changes, which in this country, particularly, seem to be the popular pastime. Were the conditions and the minds of men in the same attitude as existed in the early days, when the laws of the Medes and Persians were unalterable and irrevocable, there would be little need for such changes as have taken place in the reconstruction of the laws of the state and country.

There is a real crying need for a more general awakening on the part of the medical profession to become conversant with the existent laws, especially as they relate to the practice of the healing art, and the purpose of this editorial is to place squarely before the members of the profession the duty which rests upon every individual connected with this practice. This duty becomes more and more apparent when one surveys the ever-increasing number of bills that appear before the House and Senate of the Legislature of Pennsylvania and other states, which relate to the practice of medicine and the other branches of the healing art. We use the term "healing art" advisedly because it is not possible to describe in a short sentence the many varieties of practitioners who exist in this country under the guise of cults, and yet it is just for this reason that so much legislation affecting the healing art is required.

It is a very much easier step to place a law upon the statute books of the state than it is to repeal one, however prevalent the illusion is that repealing laws is a simple matter. A law when once made is more apt to be amended from time to time as a patchwork quilt or as the numerous additions to the house as the family grows than to tear down the old structure, purchase a new quilt, or repeal the law and make a new one.

The medical profession particularly, which is standing firmly upon the principles of scientific attainments, desires a high standard of efficiency, and with this thought in mind has endeavored to preserve the standards which they have attained during the past century. From time to time an effort has been made to interrupt this progress and break down the structure which has with hard labor been erected. The laws which concern the practice of medicine have been badly mutilated. This is a discouraging problem to contemplate.

However, we more especially want to point out the need of obeying the laws that are upon the statute books as an example to those who are endeavoring to persuade the public that they are able to do what we can do in the practice of the healing art through different methods, and all without the necessary preparation, thereby violating the laws of the state, as they are practicing medicine without securing a proper license. The effort to correct this tendency by legislation, giving these people the power to perform the same as others, must of necessity react upon our profession, so that whatever laws are on the statute books concerning our practice, which are restrictive or in any way disturbing, we must nevertheless conform to these laws, obey them and show by precept and example that we are

law-abiding citizens, willing to conform to the necessary legal requirements for the protection and benefit of the people of the commonwealth.

Step by step have numerous laws in the past ten years been placed on the statute books which affect the practice of medicine, such as the Harrison Act, the Volstead Act, the various state and national regulations relative to reporting diseases, and others, too numerous to mention, which are of vital importance to our profession.

We must not be oblivious or ignorant of the provisions of these laws, but should become as well acquainted with them as is the man who practices law and is thereby able to discern their defects as well as to follow their precepts. We have discovered that one of the greatest opportunities to criticize the profession has been by pointing out the errors which have been made by our own members, and it is with the greatest of difficulty that in a discussion we are able to defend ourselves when so many violations of the statutes are presented against our craft. This condition should be corrected. Our profession should walk uprightly and follow precepts and examples as did the Medes and Persians, thereby obviating the necessity of saying—"We must obey the law."

TUBERCULOSIS

THE HISTORY OF TUBERCULOSIS
THE NEED FOR THE CONTINUATION OF THE STATE TUBERCULOSIS DISPENSARIES AND SANATORIA

Cuneiform inscriptions found in Babylonian ruins indicate that tuberculosis was known to the earliest civilization.

Democritus, who preceded Hippocrates, wrote an essay "On Those Who Are Attacked With a Cough After Illness." Hippocrates (400-377 B. C.), "The Father of Medicine," portrays the symptoms of phthisis in a manner that for centuries was unsurpassed, and his schools believed that the disease was curable in all stages. He regarded it as a fever (which might be accompanied by hemoptysis and pleurisy), due to the dropping of the pituita from the head into the lungs, causing ulceration. He noted the association of bulbous fingers with the phthisical habit.

Aristotle (384-322 B. C.) recorded the general belief among the Greeks that phthisis was contagious. Aretaeus (beginning A. D.) gave a clear description of tuberculosis and advocated sea voyages and the air of the country. Celsus distinguished tuberculosis from atrophy and cachexia and recommended the climate of Egypt, milk and sea voyages. Pliny (61-113 A. D.) lauded the healing powers of pine forests. Galen (130-200 A. D.) advised a milk diet and a dry climate for the treatment of tuberculosis and sent his patients to the higher lands of Phrygia.

Little knowledge was added by the Arabians or the writers of the Renaissance, but Fracastorius recognized very clearly the contagious character of the disease, regarding habitual residence with a consumptive as one of its most common sources.

Franciscus Sylvius (1644-72) was the first to describe accurately tubercles in the lungs. Richard Morton's "Phthisiologia" (1689) contains the recognition of the wide prevalence of tuberculosis with extensive knowledge of its manifestations, complications and contagious nature. Morton believed in cure in the early stage but warned against recurrence. Manget (1700) described, for the first time the miliary tubercle and Stark (1785) gave to it its proper pathological and clinical position. Sydenham advocated fresh air and, in the early stage, horseback riding. Auenbrugger invented percussion as an important part of physical diagnosis.

Bayle (1810) published the results of one of the most brilliant and complete researches ever recorded in pathology, which demonstrated the essential nature of the tuberculous process. He accepted the miliary tubercle as the starting point of the disease and described the stages of development, regarding it as a general disease of a specific nature.

Laennec(in 1811) further developed the idea of the unity of tuberculosis—that every manifestation of the disease in man, or in animals, was due to the same cause. Laennec (in 1811) published "De l'Ausculation Méditaté" in which he described tuberculosis anatomically, establishing a more definite relation between the presence of tubercles and consumption, advocating the identity of pulmonary and glandular tuberculosis pathologically. He gave the first careful study of the healing process and one of the first and best descriptions of the supta. He also gave a full account of the physical signs.

Rokitansky supported the views of Laennec but insisted on the susceptibility to infection of those with the phthisical habitus. Andral Skoda, C. B. J. Williams, Stokes and, in America, particularly Austin Flint, gave clearness to the description of symptoms and physical signs. Lebert described a so-called "tubercle corpuscle" as a non-nucleated cell in the midst of tubercle formation. Virchow expounded the pathological and histological structure of the tubercle, but caused great confusion by an attempt to disprove

the specificity of the caseous tubercle, in which he saw one form of tissue necrosis. This idea was further developed by Niemeyer.

Klencke (1843) inoculated rabbits with tuberculous material and at autopsy, twenty-six weeks later, found disseminated tuberculous deposits in liver and lungs. Buhl (1857) brought forth the doctrine of the origin of miliary tuberculosis as the result of the distribution through the circulation of an agent derived from an area of infection.

Villemin (1865) introduced infective material from tuberculous tissues and sputum into animals, non-tuberculous pus into other animals and caseous matter from cows into others. The results of his experiments confirmed the theory of specificity and demonstrated the apparent identity of bovine and human tuberculosis. Cohnheim followed Villemin by the injection of tuberculous material into the anterior chamber of the rabbit's eye, thus affording a means of inspection of the gradual development of the pathological changes. Chauveau (1868) proved that pulmonary tuberculosis could be brought about by the ingestion of tuberculous material without the production of any injury to the digestive tract.

Robert Koch (in 1882) discovered the microorganism in tuberculous tissues and, by Erchlich's method of differential staining, showed its presence in all parts of the body, demonstrating its etiologic relationship to man and to animals and its absence in other than tuberculous conditions.

S. G. Dixon (in 1889) published results of his discovery and observations of the atypical or attenuated forms of the tubercle bacillus from which a watery extract for the specific treatment of the disease and, adopting a minimal dosage at that time, maintained it with successful results during the period of intense reaction against the tuberculins of Koch and others to the present day, when this treatment is more widely recognized than ever before.

Karl Pearson applied the new biometric methods to the study of the statistics of inheritance in tuberculosis and concluded that there is an hereditary diathesis. Cornet demonstrated the prevalence of tubercle bacilli in dust and claimed that the chief means of infection was by inhalation. Flugge modified this view by showing that the danger was not so much from dust in the air as from infected droplets of mucus and saliva thrown off from the patient in the acts of coughing, speaking and sneezing. In 1901 Koch denied the susceptibility of human beings to bovine tuberculosis. The reports of German and English commissions showed the contrary. Von Behring discredited dust-borne infection and held that children are infected, chiefly, through cows' milk. This has been substantiated in America by the work of Theobald Smith.

Space does not permit the mention of the numerous clinicians, pathologists and sociologists who are working with renewed enthusiasm at the present time. However, this article should not close without mentioning the names of Brehmer who, in Germany, established the first sanatorium for tuberculosis, and Philip, of Edinburg, who established the first tuberculosis dispensary in 1887 and announced its functions in the service of the community.

This is an opportune time to call the attention of the physicians of the state to the importance of the continuation of our state tuberculosis dispensaries and state sanatoria. Owing to the financial status of the commonwealth it may be necessary to reduce the budgets of the various departments, but there is no more worthy cause for the expenditure of money than the care of the tuberculous who are unable to care for themselves.

F. F. D. R.

A GLIMPSE INTO THE PAST

A most interesting article on the *Pittsburgh Medical Review* appears in the department of the Pittsburgh Academy of Medicine, in this issue of the Atlantic. This forms an illuminating prologue to the history of the Journal written by the late Dr. Cyrus Lee Stevens, former editor, which appeared on page 560 of The Pennsylvania Medical Journal for May, 1921.

It is always fascinating to trace a stream back to its source, so in view of the latest development of the Journal, this article is especially timely. All honor to the men who had the courage to start the publication, contributing the copy, the labor connected with the details of publication, and assuming the financial responsibility. It took vision to accomplish the results they obtained, and it took a mighty amount of good hard work. All honor to the men who, when the funders relinquished their ownership of the Journal, took over the burdens and carried them for years without adequate support, without sufficient interest on the part of their readers to lighten their tasks, plodding along over the wearisome details, oftentimes without sufficient appreciation—All honor to our pioneers! May the visions for the future of the Journal of those now guiding its destiny not prove to be mere mirages! May the Journal continue to grow and develop and be worthy of its past!

Read the above-mentioned article appearing in this number. Some of the subjects discussed in

the *Review* are as live to-day as they were when first published. Indeed, we suspect that the cream Dr. Hay never got was put into cold storage to sell to us to-day at the increased prices prevailing! If so, would not this provide a good subject for the annual "investigation" by Congress?

Would that more men could be secured to continue the good work of the days of the *Review* in abstracting the many good things that come to the editorial desk! This department could with profit be stressed to a considerably greater extent, and the editor should be glad to enlist volunteers.

If virtue is its own reward, the JOURNAL might be excused for patting itself on the back a bit. Read—"At the time of the *Review*, it was the only medical journal printed that in its advertising sheets did not carry patent medicine advertisements. *It happened that the Journal of the American Association did.* [Italics are ours.] What scathing remarks Shaw turned loose on the *Journal!* This was an almost continuous war until at the end the *Journal of the American Medical Association* was forced to change its policy. There is good reason to believe that the *Pittsburgh Medical Review* is responsible for the change." Is further comment indicated?

It does us good sometimes to review the past. It acts as a balance wheel, as a stabilator in traveling the rough road to the future that we can ill do without. We must not let the past be more glorious than the future; the price of retrogression is too great. Therefore, "To arms, ye brave; your sword unsheath"—you know the rest of it! M. S. B.

THE PHYSICIAN'S RESPONSIBILITY FOR LAY EDUCATION

It seems that the medical profession grasps only with extreme difficulty the fact that its members are their brothers' keepers in a health sense. Whether it is inertia, a fear of seeming to advertise their wares, or what not, doctors seem exceedingly averse to any attempt to educate the public in common-sense views as to scientific medicine.

This is neither wise nor kind. We must not forget that medicine is a highly specialized science, and even though a man may be well educated in general, if he has not had an opportunity to imbibe the medical point of view, his ignorance on the important subject of health may be abysmal. Indeed, the ignorance of common-sense, every-day medical subjects on the part of our average citizen is simply appalling. True, we teach physiology and hygiene in our public schools, but some way we fail to hitch it up with the practical problems of life. We fail to "sell," to "get across" to the public what it is we are trying to do. The people in general cannot understand that the profession is working for the people's own benefit. They cannot get away from the idea that doctors are just "coining money," that they are ready to grab the last penny from any poor duffer that is unfortunate enough to get in their clutches.

We *must* change this point of view some way. We *must* get the people to understand that while, just as in every business and profession, there are some grafters and crooks, the rank and file of the profession are well-meaning gentlemen who are really desirous of helping their patients, as well as the people at large. We *must* get them to see that the medical profession as a class are their real friends, that our opposition to quacks and cults is not a financial one, but due to the honest and earnest belief that their proponents are not honorable men who desire the welfare of the people, but at best deluded cranks, and at worst rascals who are after the ultimate dollar they can squeeze from their dupes.

We *must* emerge from our isolation, realize that the proper kind of advertising (not advertising of personal merits and abilities, but advertising of our ideals and aims and achievements as a profession) is not unethical, and embark on a campaign to secure the understanding and coöperation of the public in place of their present antagonism, open or thinly veiled, or their indifference. This can be done, if we will just forget ourselves for a little while, just drop our own indifference, forget what people may say about us, forget our too great professional dignity, and go after this really big thing that is now in our power to grasp. Let us do it now. To-morrow may be too late.

The American Medical Association is making an effort in the right direction, in their publication of *Hygeia,* their new lay magazine, the first number of which appeared in April. Let us support this, by our contributions, by our subscriptions, by recommending it to our patients.

The State Society is also making an effort in the right direction through the appointment of the Committee on Public Relations. This committee has just put on a state-wide campaign against diphtehria. It is still too early to estimate the good done by this campaign, but it is scarcely too much to expect that in every county where the doctors all coöperated they found the laymen ready to go half-way, and that the good done will appear for many a month to come.

Such activities as these are but a start in the right direction. Let us not weary of good works,

but by constant and gentle pressure gradually secure the confidence of the public that our fathers seemed to have, and that some mysterious modern influence seems lately to have weaned away from us. M. S. B.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE FINANCIAL SIDE OF A PHYSICIAN'S LIFE

FEES—COLLECTIONS—SAVINGS—INVESTMENTS—AND SAFE SPECULATION

LAMBERT OTT, M.D.

PHILADELPHIA, PA.

It may seem ludicrous or the work of supererogation to discuss the financial side of the physician's life, but when we review this life of labor and sacrifice, and the large portion of work charitably given and much service rendered and unpaid for by the unscrupulous, is it not time we collectively considered methods and means to improve our financial status, so that, when our waning energies presage lessened earnings, there is accumulated a modicum whereby we can spend the evenings of our lives in ease and retirement? In my observations I find the average estate of a lifetime of the practice of medicine—30 to 40 years amount to such meager sums—five thousand, ten thousand, seldom thirty thousand to fifty thousand, and a general average of fifteen thousand dollars—a sum bearing so small an income at 5% or 6% that it is insufficient to support a small family, even stintedly, in a semi-respectable manner. The wealthy doctor is an exception; and if he possesses means far above the average holdings of the general run of physicians, he has either benefited by the marital tie, or has been made the protégé of some extremely wealthy family, which appreciates the ennobling elements of the qualified conscientious physician by showering some of their surplus on him, in order to aid them in maintaining good health, so that he fills the position of the German appellation, Leib-Artz. In another case he may have been favored by some opportunity which by chance presented itself, and was shrewd enough to divine its promises; then by association with sterling business men, guiding their plans to a brilliant and successful issue, he became one of the beneficiaries. Or fortune may have favored him, throwing an inheritance into his lap, which he wisely nursed and strengthened by careful living and judicious investments.

But we do the medical mind an injustice by claiming that either small or colossal fortunes possessed by them are obtained by some fortuitous circumstances or by some element of chance; for in my personal experience I have known physicians who possessed a high order of business acumen and who knew the value of the primal saving, the laws of accretion, accumulations, careful investments, strengthening the principal, avoiding spectacular speculation, and never permitting their living expenses to reach too close to the margin of their incomes. When I review the past of some of them whom I have personally known many years I find they were good family men, highly honorable, socially agreeable, but not frittering too much time away in social outings, and who, in their *"Tout ensemble"* embodied the trite saying of the distinguished Chauncey Depew, "Stick, dig and save."

It is an old question as to why the physician is such a poor business man. My answer is that he carries the major burdens of mankind on his shoulders: the sickness and sorrows of his patrons; often unreasonable expectations on the part of his patients that he must alleviate or remove all their ills, even if incurable; and above all the irregularity of his life—all hours of the day and night in demand, constantly dealing with life and death, and often in the much broken rest the anxieties of the day crowd sleep from his mind—unrested, unrefreshed, but undaunted, and with a renewal of his trials and responsibilities besetting him, variable and keen, sometimes heart-breaking and saddening—how can he, with such nerve tension and strain, gain and retain any business sagacity, when his conscientious endeavors are placed at all times in and among the shadows of the triple medley of pain, sorrow, and death?

Because of his attention being riveted on the adverse side of life, which demands concentration and responsibility, he does not acquire that protective experience which every business man—even an unlettered one—gains after a time, and thus shielded by the suggestions of untoward problems of the past, he quickly discerns a hyperbole of promises, and soon learns to sift the chaff from the grain. We physicians do not barter and sell or directly advertise. Our results at the bedside either mar or make us, and our over-garrulous patients carry the propaganda of praise or derogation among their friends and strangers. To please all is impossible, but to be natural and conscientious and well-informed is easier and more winning than to ape some successful progenitor or colleague who evolved eccentricities through the inflations of his skill and success. The banker receives and protects your money and studies safe and durable invest-

ments. With his abbreviated hours he is only in contact with the material, less fraught with anxiety and some little responsibility; therefore, calm study of conditions enables him to procede wisely to decided success. But analyze the elements surrounding the merchant and the professional man, especially the physician, and you will concede the latter is constantly on the turbulent waves of a sea of human abnormality—haste, fear, speedy judgment, impending demise, and the placating of those concerned, who are often troublesome factors besetting our honest efforts in the sick room.

We now come to the question of fees.

On my way to London several years ago I stopped in Southampton for a day, and in my wanderings I saw the sign:

Chemist and Apothecary; Teeth Extracted.

I made a minor purchase of the proprietor and after a few casual remarks, asked him about his sign, "Teeth Extracted." He replied, "Oh, yes, you know"—pulling from under the counter a roll of complete extraction forceps—"we do much of this, and it has been the custom here for many years." I then asked him, "What are your fees? " He replied, "That depends upon the color of the cloth; a sixpence or nothing from the poor, and two or more shillings from those better able to pay."

Philadelphia is noted for its small fees on the part of doctors. Now we charge more, and should have more, since all things are higher in price, and our fees should be *correspondingly more*. Since the war, the public seems to concede that the fees should be greater than in prewar times, and nearly always cheerfully responds to the advance. Let those of superfluous wealth pay big fees to compensate for the vast amount of work given to those charitably needy. The public cannot go to Wanamaker's and obtain clothing without paying therefor, but they can go to the hospital and obtain, gratuitously, a major operation, which should bring the surgeon several hundred dollars. This sad state of affairs we have brought on ourselves and have educated the public to look upon this gratuity as their inalienable right.

As to collections: Keep your books carefully and accurately. Thrice blessed is the physician who has a good helping wife to assume this labor—which is drudgery to the doctor—and cooperates with him in maintaining the business side of his calling at a high and successful tide. Send bills monthly, and in those cases where there is no response after a reasonable time, send a reminder. Usually it is followed by a prompt reply. When a third appeal is not successful, go in person and ask for what is rightfully yours. The affluent are not always the most prompt in settling their accounts; and how often have I had to go to the office or counting house of the semimillionaire and ask for a liquidating of my long-standing account. Some take a pride in paying promptly, whilst many ignore your demand in a spirit of indifference, as if it were an unjust earning. Doctors who follow their accounts assiduously—diplomatically but firmly—have their homes paid for, money in the bank and some income on invested capital. Timidity in collection will soon find you on the wrong side of the ledger and it will eventually be all labor and no returns. In a large department store where I have had a charge account for 35 years and always paid the day the bill was rendered, there was sent to me in the middle of the month, a sharp reminder on a small account overlooked because of serious illness in my immediate family. They were right, and I at once wrote an apology with the necessary check enclosed. At the same time, and under similar circumstances, a monthly bread bill had not been paid, which was due the first of the month. Six days thereafter the collector came. My good wife happened to go to the door, and was more than offended. I overheard the wrangle, promptly paid the account with an apology and requested him always to call if his bill was not paid within a few days. This department store and fairly large bakery have the best teams on the street, serve you with clean, wholesome food and commodities, have ample credit, well-paid and satisfied employees, and the proprietors have their summer cottages and a stable business—and why? *Because* they promptly collect, avoid long credits and have practical and business methods. Examine a business on a cash selling basis: chain grocers, street car companies, cash-and-carry stores, as they call them in the Western cities—all prosperous, happy, successful, because of no credits. Why should we not profit by this observation? And if we are of a class of small fees, then so much more is it necessary to get this fee at once and salt it away in a safe investment where it will grow and multiply.

No reasonable patient who trusts you with his life and that of his family, will take umbrage at your calling to collect the money due you. If he does, he is not fit to be the patient of a respectable doctor, but should and usually does have his leg pulled by the charlatan, who calls for his fee in advance and then promises a series of treatments which he knows will not cure the disease. But what does he care; *he has the money!*

All our grandiloquent and postprandial orators, in declaiming the nobility of the profession, advise us to keep clean, keep abreast of the times, be noble and generous, merciful and soothing, sympathetic to the sick and suffering; but most of them forget to add, "Take good care of thyself in a business way, so thou wilt have something to lean on when the evening of life is upon thee."

Poor Richard's philosophy says:

> For age and want save while you may;
> No morning sun lasts a whole day.

Savings: If you make a dollar, save twenty-five cents; if one hundred dollars, put away one quarter thereof. Unless you begin the saving habit early in life, it will not come or cling to you later. If you begin by being extravagant early in life—and remember, early impressions are lasting—the tendency is more likely to grow faster (to your disadvantage) than the saving inclination; also bear in mind contingencies in life which interrupt one's earning capacity. If no provision is made while the golden flow is in full glamor, you will find yourself and family in the lurch, with creditors pressing and landlords calling while you are on a bed of sickness. Where is there a more depressing picture, a more pathetic scene to aggravate your illness and prolong your suffering?

Let it be an obsession to dwell moderately on the following possibilities: an unexpected, brief or long, interruption in your vocation; slack times; tardy payments; increased living expenses; family growing larger and more expensive; vacillating and insecure patrons; occasional dissatisfaction; and so on, these shadows may be multiplied. With all the above eternally threatening you, what will prod you quicker to frugality than this ominous cloud, with its trail of disappointment and suffering?

You cannot advance if you do not save. You are illy prepared for the ease and retirement of later years, which all physicians really deserve, and the pangs of severe retrenchment and the curtailment of comforts when most needed will be your dessert, if not nursing and practicing the saving habit early. I have known doctors who had showered on them property without decided effort, money in abundance, either by inheritance or marital tie, who cultivated extravagance, expending without judgment, catering to the admiration of the fawning, not giving a thought to the fact that all unnatural procedure must end in disaster, thus either shortening their lives or thrusting themselves into poverty—and woe betide them, with their money and popularity gone, friends forsaking them, and the isolated wreck merging into the foolish, forsaken and poverty-stricken old man ready to die and be forgotten.

What can one say as to investments? Go to your banker for advice—*not to friends*. Beware of the friend promoting a new thing, unless it be in a line you fully understand—and keep a watchful eye on the future management! When a broker sends you a telegram at midnight (and it is a psychological procedure) of something good, in which you are asked to invest, stop, consider, go slow, and see your banker—and then do not bite. Some years ago, when a much younger man, I lost five thousand dollars to the tune and allurement of a midnight telegram replete with wonderful promises.

How, then, shall we invest our savings? Buy first mortgage bonds on real estate in a growing neighborhood, trust company stock and reliable railroad stocks, varying your investments, so when one weakens or lapses, the other may be growing stronger at the same time. But there are changes—ups and downs—and when invested capital is scattered, so to speak, not too much in any one thing, you will have the satisfaction of having many items getting stronger, to compensate for the lapses or weakening at other sources. Even with good advice and judgment you cannot always invest successfully, but study reliable financiers, honest men I mean, and even consult them when possible, and they will guide you aright.

Women are the most inconsiderate in ignoring and safeguarding the principle. How often have I advised them to reinvest a small share of their income and thereby stabilize the principle. I recall a young and very sensible woman who had an independent income from 6% city loans and whenever her check was forthcoming, her many purchases were seemingly needless. I reminded her that these loans would in time be paid off, and such favorable investments would not be obtainable. She laughed at my advice, and later, when the bonds were paid, she at once rushed to a real estate agent, and he advised her to buy small properties, which she did. Instead of those biyearly checks, she received repair bills and a small balance of the rent. You can imagine her amazement at the difference in her returns.

Permit me to be more specific as to real estate investment. Business property is a better purchase than private dwellings. It enhances in value more than residence property. The neighborhood aids the occupant in paying your rent. Money comes in large and small amounts from many people, thus insuring your rental. Corner properties have more probabilities than inside properties. If you buy improved lots or land,

study the trend of the growth of population and always cling to the line of transportation. A doctor should not let a mortgage remain on his property any length of time if he is holding it as an investment. Pay it off, have it clear, and when untenanted for a time, as property naturally is, there is less to worry about. But to control a piece of property having a decided speculative value, a mortgage as large as it will bear, will aid you in making a quick turn. It also has a second advantage in requiring a small amount of capital. Where to buy and what to buy is a matter for sound judgment and study. Do not be timid when you see a good thing, even with only a little money at hand try to gain control and then have the rental return aid you in carrying it. When investing in a business neighborhood, remember the old German proverb which says:

"Where the Jews buy, you buy too;
If the Jews are leaving a neighborhood, you leave too."

Philadelphia real estate has been hampered by high assessment and burdensome taxation. Secondly, repairs are more expensive than at any time in the history of realty investments. A fair rental income is often consumed by the foregoing charges. Because of this drain, the large holders of real estate have been selling wherever marketable. If I have been a little successful in buying property, it was, in several instances, in buying what no one else wanted. My two most successful ventures were made under the above circumstances. Business developments have an invariable trend, and if one can discern the direction of this growth, a purchase in anticipation of your conclusion will often result favorably.

When is speculation safe? Only when you buy property, either personal or real, outright; no mortgages, no mechanic's liens, no back taxes, no stocks on margin—this is what I call safe speculation. Unsafe speculation—buying stocks on margin—is unsafe and hazardous, and in the end you will be the loser. You may gain several times, which will stimulate you to go further, and when filled up with marginal purchases, the crash comes and you lose all.

When the late Anthony Drexel was asked by friends what to buy speculatively, he replied: "Rather play poker."

May I, in conclusion, add a few aphorisms: Be content with less or little; obtain more, gradually and safely. One cannot acquire the colossal fortunes of the Morgans, Goulds, Rockefellers and the like. These men are phenomena, who divined and embraced rare opportunities. I dare say their wealth grew to such proportions, even beyond their wildest dreams. Big fortunes rear unhappy families and worthless children; the incubus of the day in America, is the children of the rich. A substantial and round income, procuring plain comforts, not permitting extravagances, amply providing for the day when the earning powers are at a minimum, is to be desired, and associated with this modest income, a sincere, plain and modest life. Being and acting what nature made you—kind and charitable to all, and reverent to the poor and humble, with kind words and kind deeds as a part of your daily life—you will be a man after God's own heart.

COMMUNICATION

The Atlantic Medical Journal, Harrisburg, Pennsylvania.

Dear Editor: The Northampton County Medical Society has endorsed and passed unanimously the inclosed resolution. The resolution speaks for itself. It is our hope that you may concur with us in the matter under consideration and give the same publicity. We are,

Very respectfully,
The Northampton County Medical Society,
Victor S. Messinger, Secretary.

April 21, 1923.

Resolutions Submitted to the Northampton County Medical Society, April 20, 1923:

Whereas, The diagnosis of disease by laboratory methods, instead of being confined to physicians trained in medicine, is being exploited by lay technicians and commercial houses; and

Whereas, There is danger of this specialty in medicine becoming degraded by unseemly and blatant advertisements of commercial diagnostic laboratories now appearing in certain medical journals; therefore be it

Resolved, That the status of the clinical pathologist and the radiologist is on a par with that of the internist, surgeon or other specialist in medicine and conformable to the same code of ethics and high moral standards;

Resolved, That the publication of advertisements calling attention to the special merits of a particular laboratory or announcing prices of various laboratory examinations are contrary to good taste and subversive of the ethics of the practice of medicine;

Resolved, That the Northampton County Medical Society requests the *Journal of the American Medical Association,* the official Journal of the Medical Society of the State of Pennsylvania and other reputable medical periodicals to bar the advertisements of commercial diagnostic clinical and radiological laboratories from their advertising pages, permitting only licensed graduates an insertion of their professional cards, giving, but the name, specialty and address;

Resolved, That in the interest of the patient and for the advancement of scientific medicine, encouragement should be given to the establishment of resident clinical pathologists and radiologists in all communities where the population and number of physicians warrant specialization in these fields of medicine.

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

REDUCED RAILROAD FARES TO PITTSBURGH

Through the enterprise of Dr. J. A. Hawkins, Pittsburgh, Chairman of the Transportation Committee (a subcommittee of the Committee on Arrangements) for the 1923 Session of our State Society in Pittsburgh, October 1-4, 1923, a reduction to one fare and one-half will be offered to our members on the certificate plan.

This is a concession that we have not been granted for a number of years, and is contingent this year upon the attendance of not less than 250 members of our Society or dependent members of their families who hold certificates which have been issued by the railroad ticket agents at the various starting points. Be sure when purchasing your going ticket to request a certificate, *not a receipt.* Immediately upon your arrival at the Pittsburgh Session, present your certificate for endorsement by the Secretary of the State Society at the Registration Desk.

If 250 certificates, the necessary minimum, are presented and duly validated, you will be entitled to a return ticket, up to and including October 9th, at one-half the regular one-way fare from the place of meeting to the point at which your certificate was issued.

SPLENDID RECORD

The Medical Society of the State of Pennsylvania had 7,327 members in 1922; on April 27, 1923, 7,026 members had ben reported to this office as having paid their 1923 dues. This is 96% of the 1922 total membership.

These results were achieved largely by the enterprise and efforts of the various county society secretaries.

The following list indicates the approximate percentages paid to date by various component societies:

Bedford	100%	Schuylkill	94%
Butler	100%	Union	94%
Clarion	100%	Washington	94%
Clearfield	100%	Armstrong	93%
Huntingdon	100%	Blair	93%
Lebanon	100%	Crawford	93%
Lycoming	100%	Jefferson	93%
Mifflin	100%	Columbia	92%
Monroe	100%	Luzerne	92%
Montour	100%	Northampton	92%
Perry	100%	Potter	92%
Susquehanna	100%	Chester	91%
Warren	100%	Cumberland	91%
Wyoming	100%	Dauphin	91%
Cambria	98%	Juniata	91%
Montgomery	98%	Lackawanna	90%
Westmoreland	98%	McKean	90%
Allegheny	97%	Northumberland	90%
Bucks	97%	York	90%
Fayette	97%	Beaver	89%
Adams	96%	Center	89%
Carbon	96%	Mercer	89%
Clinton	96%	Philadelphia	89%
Elk	96%	Venango	89%
Greene	96%	Bradford	88%
Indiana	96%	Lawrence	86%
Delaware	95%	Sullivan	85%
Franklin	95%	Lancaster	81%
Somerset	95%	Tioga	81%
Berks	94%	Wayne	73%
Erie	94%	Snyder	66%
Lehigh	94%		

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to April 20th:

ADAMS: *Death*—James G. Stover of Bendersville (Coll. of Phys. & Surg., Md., '92), April 10, aged 54.

ALLEGHENY: *New Members*—Willard E. Austen, Mercy Hospital; Isador K. Gardner, Cheswick Apt., McKee Place; Alfred T. McElroy, 2854 Perrysville Ave., N. S.; Harry E. Canter, 522 S. Winebiddle Ave.; Harold J. Byron, Eye & Ear Hospital, Fifth Ave.; Leo H. Criep, May Bldg.; Merle R. Hoon, Jenkins Arcade; John O. Woods, 4634 Fifth Ave.; Edmund C. Boots, Highland Bldg.; Mortimer Cohen, Magee Hospital; Samuel Goldstein, 1801 Center Ave.; Benjamin Levant, 1204 Fifth Ave., Pittsburgh; Thaddeus J. Telerski, 300 Ninth St., New Kensington; Louis Tuff, Mayview; Charles R. Smith, 241 E. Eighth St., Homestead; Earl S. Duncan, 310 Corbet St., Tarentum;

Emmett D. Boaz, Universal; John T. Allison, Harmarville. *Death*—Charles Lindsay of Pittsburgh (West. Res. Univ., Cleveland, '79), April 10, aged 66.

BEAVER: *Removal*—Norman C. Ochsenhirt from Enon Valley to 1417 Adams St., Pittsburgh.

BERKS: *New Members*—Frank P. Werner, 143 N. Eighth St., Reading; Willard H. Spear, Robesonia; Henry A. Gorman, State Sanitorium, Hamburg.

BEDFORD: *Reinstated Member*—William P. S. Henry, Everett. *Death*—Thorne Cornelius of Riddlesburg (Coll. of Phys. & Surg., Baltimore, '02), recently, aged 49.

BLAIR: *New Members*—S. W. Miller, 726 E. Walton Ave.; Louis Lass, 1309 Twelfth Ave., Altoona.

CHESTER: *New Member*—William M. Riley, Downingtown. *Death*—D. Edgar Hutchinson of Downingtown (Med. Chirurg. Coll., Phila., '05), recently, aged 41.

CLEARFIELD: *Resignation*—James B. Rucker, Toledo, Ohio. *Death*—Senes E. Hayes of Byrnesdale (Med. Chirurg. Coll., Phila., '96), March 20, aged 65.

CUMBERLAND: *Deaths*—Anna Galbraith of Carlisle (Women's Med. Coll., Phila., '84), recently; Enos K. LeFever of Carlisle (Univ. of Penna., '94), March 28, aged 55.

DAUPHIN: *Transfers*—William R. Rothe, Harrisburg, from Venango County Society; Harold F. Lansche, 502 N. Second St., Harrisburg, from Cumberland County Society.

DELAWARE: *Reinstated Member*—Everitt H. Dickinson, 67 Owen Ave., Lansdowne.

ERIE: *New Members*—J. A. Dinnison, 325 W. Twenty-sixth St., Erie; Russell S. Anderson, Wesleyville. *Death*—John J. Bell of Erie (Coll. of Phys. & Surg., Balt.), March 16, aged 54.

FAYETTE: *New Members*—George R. Glass, Uniontown; John M. Gemmill, Belle Vernon.

HUNTINGDON: *Removal*—Gladys W. Newlin from Huntingdon to 1021 Mulberry St., Scranton (Lack. Co.).

INDIANA: *New Members*—Joseph S. Wilson, Marion Center; F. J. Kellam, Ernest; William L. Benz, Blairsville. *Removal*—Malcolm L. Raymond from Waterman to Homer City.

JEFFERSON: *New Member*—George Boehm, Eleanor. *Removal*—Norman C. Mills from Eleanor to Clarion.

LACKAWANNA: *New Members*—L. D. Griffiths, 722 So. Main Ave.; William A. Ryan, 935 Capouse Ave.; M. J. Shields, 717 Pine St.; James J. Reilly, 617 Adams Ave.; H. Carl Dimlich, 818 Richmond St.; Raymond A. Werts, 211 Jefferson Ave.; Carl T. Houlihan, 135 Parker St., Scranton; Leonard L. Friedman, Carbondale; Richard D. Roderick, Box 73, Jermyn; George J. Flannely, Throop; P. A. Lonergan, Dickson City. *Reinstated Members*—Edward H. Kelly, Miller Bldg.; Philip J. Lewert, 211 Jefferson Ave.; Albert J. Winebrake, 440 Madison Ave.; R. W. Williams, 827 Green Ridge St., Scranton; M. E. Malaun, Carbondale; J. S. Murrin, Carbondale. *Death*—John B. Grover of Peckville (Albany Med. Coll., '92), Feb. 21, aged 55.

LANCASTER: *Removal*—Charles S. Duttenhofer from New Holland to Churchtown. *Death*—Miles L. Davis of Lancaster (Bell. Hos. Med. Coll., N. Y., '70), March 8, aged 78.

LUZERNE: *New Members*—Francis B. Eveland, 355 E. Market St., Wilkes-Barre; Martin L. Connors, Pittston.

LYCOMING: *Transfer*—A. Rowland Kirch of Williamsport from Montour County Society.

LEHIGH: *Reinstated Member*—Fred G. Klotz, 126 N. Ninth St., Allentown.

MONTGOMERY: *Transfer*—Margaret C. Sturgis of Ardmore, to Philadelphia County Society.

MONROE: *Resignation*—Robert R. Gerhart, Linden Hall (Center Co.).

NORTHAMPTON: *New Member*—Jacob W. Kline, 43 N. Fourth St., Easton.

NORTHUMBERLAND: *New Member*—Joseph Fisher, 316 S. Third St., Sunbury. *Death*—David S. Hollenbeck of Shamokin (Jeff. Med. Coll., '82), March 15, aged 87. *Resignation*—Raymond C. Fagley, St. Louis.

PHILADELPHIA: *New Members*—Everett S. Barr, Byberry; Thomas J. Walsh, 2225 Greene St.; Frank H. Krebs, 1914 E. Cumberland St.; Charles T. C. Nurse, 713 S. Sixteenth St. (transferred from Luzerne County Society); Temple S. Fay, University Hospital, Thirty-fourth and Spruce Sts.; Harry S. Fist, 1225 Spruce St.; William O. Kleinstuber, 2816 D St.; Max Harris, 1307 Girard Ave.; Ethel C. Russell, 3600 Walnut St.; A. C. Menger, 1502 N. Twenty-ninth St.; Frederick S. Schofield, 4402 Walnut St.; David Budin, 3125 Diamond St.; David M. Sidlack, 927 Spruce St.; Carroll S. Wright, 1922 Spruce St.; Florence E. Ahlfeldt, 2011 E. Allegheny Ave.; Eugene M. Hughes, Philadelphia Hospital Byberry; Harry M. Metzger, 1503 N. Franklin St., Philadelphia. *Reinstated Members*—William F. Morrisson, 2044 Chestnut St., Philadelphia. *Deaths*—Augustus Koenig of Philadelphia (Univ. of Penna., '94), recently, aged 53; Samuel W. Latta of Philadelphia (Univ. of Penna., '68) March 13, aged 75. *Resignations*—A. Du Pont Smith, Morris B. Miller, John Ricciardi, Philadelphia; and Matthew Czuback, Wheeling, W. Va.

SOMERSET: *Death*—Charles P. Large of Meyersdale (Univ. of Penna., '00), recently, aged 45.

SCHUYLKILL: *New Members*—John J. Conway, Gilberton; Walter A. Lushinsky, Shenandoah; Lewis E. Davis, Centralia; P. Ray Meikrantz, Shenandoah. *Reinstated Member*—John S. Monahan, Shenandoah.

SUSQUEHANNA: *Transfer*—Robert B. Mackey, Montrose, from Lackawanna County Society.

TIOGA: *Reinstated Member*—Harry A. Vosburg, Arnot.

WARREN: *New Member*—Howard K. Petrey, State Hospital, Warren.

WASHINGTON: *Reinstated Member*—R. G. Furlong, Donora. *Transfer*—Walter R. Livingston, Polk, to Venango County Society.

YORK: *Reinstated Member*—Benjamin F. Posey, York.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since March 17th. Figures in first column indicate county society numbers; second column, State Society numbers.

Mar. 19	Perry	8	4535	$5.00
Mar. 20	Montgomery	135–142	4536–4543	40.00
	Somerset	29–33	4544–4548	25.00
	Franklin	35–39	4549–4553	25.00
	Mifflin	22	4554	5.00
	Erie	79–104	4555–4580	130.00
	Northampton	66–100	4581–4615	175.00
Mar. 21	Huntingdon	1–30	4616–4645	150.00
	Blair	58–77	4646–4665	100.00
	Bradford	23–39	4666–4682	85.00
	Dauphin	126–135	4683–4692	50.00
	Butler	30–37	4693–4700	40.00
	Venango	21–24	4701–4704	20.00
	Perry	9	4705	5.00
	Delaware	71	4706	5.00
Mar. 22	Lebanon	35–37	4707–4709	15.00
	Beaver	49–51	4710–4712	15.00
	Venango	25–32	4713–4720	40.00
	Perry	10–11	4721–4722	10.00
Mar. 26	Perry	12	4723	5.00
	Columbia	27–31	4724–4728	25.00
	Venango	33–43	4729–4739	55.00
	Delaware	72–74	4740–4742	15.00
	Somerset	34–40	4743–4749	35.00
	Greene	27	4750	5.00
	Clarion	28–31	4751–4754	20.00
	Beaver	52–56	4755–4759	25.00
	Armstrong	41–48	4760–4767	40.00
	Dauphin	136–138	4768–4770	15.00
	Lackawanna	139–159	4771–4791	105.00

	Bradford	40–41	4792–4793	10.00
	Juniata	8–9	4794–4795	10.00
	Cumberland	27–30	4796–4799	20.00
	Bedford	4–6	4800–4802	15.00
	Jefferson	2, 35–40	4803–4809	35.00
	Franklin	40–48	4810–4818	45.00
	Center	19–21	4819–4821	15.00
	Carbon	28	4822	5.00
	Cambria	106–117	4823–4834	60.00
	Westmoreland	101–109	4835–4843	45.00
	Mercer	65	4844	5.00
	York	1–94	4845–4938	470.00
Mar. 28	Westmoreland	110–115		
		123–124	4939–4946	40.00
	Indiana	1–58	4947–5004	290.00
	Somerset	41–42	5005–5006	10.00
	Mifflin	23	5007	5.00
	Cumberland	31	5008	5.00
	Snyder	6–8	5009–5011	15.00
	Westmoreland	116–122	5012–5018	35.00
	Mercer	66–67	5019–5020	10.00
	Butler	38–42	5021–5025	25.00
	Franklin	49–51	5026–5028	15.00
	Delaware	75–76	5029–5030	10.00
	Washington	103–110	5031–5038	40.00
	Lycoming	63, 102–107	5039–5045	35.00
	Bucks	61–66	5046–5051	30.00
	Fayette	82–88	5052–5058	35.00
	Bedford	7–12	5059–5064	30.00
	Cambria	122	5065	5.00
	Schuylkill	101–119	5066–5084	95.00
	Chester	35–57	5085–5107	115.00
	Lancaster	33–96	5108–5171	320.00
	Lehigh	49–83	5172–5206	175.00
	Berks	100–134	5207–5241	175.00
	Westmoreland	125–128	5242–5245	20.00
	Montgomery	143–150	5246–5253	40.00
	Lackawanna	160,		
		170–182	5254–5267	70.00
	Perry	13	5268	5.00
	Dauphin	145–148	5269–5272	20.00
Mar. 29	Tioga	1–20	5273–5292	100.00
	Dauphin	139–144	5293–5298	30.00
	Clinton	23	5299	5.00
	Lancaster	97–100	5300–5303	20.00
	Cambria	123	5304	5.00
	Center	22	5305	5.00
	Susquehanna	11–17	5306–5312	35.00
	Monroe	2–14	5313–5325	65.00
	Perry	14	5326	5.00
	Cambria	124–126	5327–5329	15.00
Mar. 30	Allegheny	703–1168	5330–5795	2,330.00
	Clearfield	60–64	5796–5800	25.00
	Indiana	59–63	5801–5806	30.00
	Westmoreland	129–133	5807–5811	25.00
	Venango	44	5812	5.00
	Beaver	57–58	5813–5814	10.00
	Dauphin	149–150	5815–5816	10.00
	Cambria	118–121	5817–5820	20.00
	Columbia	32	5821	5.00
	Lebanon	38	5822	5.00
	Wayne	17–19	5823–5825	15.00
	Cumberland	32–33	5826–5827	10.00
	Tioga	21	5828	5.00
	Union	14–15	5829–5830	10.00
	Delaware	77–80	5831–5834	20.00
Mar. 31	Jefferson	41–49	5835–5843	45.00
	Lawrence	33–38	5844–5849	30.00
	Washington	111	5850	5.00
	Huntingdon	31–32	5851–5852	10.00
	Butler	45–50	5853–5858	30.00
	Delaware	81–84	5859–5862	20.00
	Cambria	127	5863	5.00
	Mifflin	24	5864	5.00
	Dauphin	151	5865	5.00
	Mercer	68	5866	5.00
	Schuylkill	120–121	5867–5868	10.00
	Butler	43–44, 51	5869–5871	15.00
	Montgomery	151	5872	5.00
	Fayette	89–90	5873–5874	10.00
	Juniata	10	5875	5.00
	McKean	25–36	5876–5887	60.00
	York	95–108	5888–5901	70.00
	Erie	105–113	5902–5910	45.00
	Warren	37–49	5911–5923	65.00
	Crawford	28–50	5924–5946	115.00
	York	109	5947	5.00
	Lycoming	108–112	5948–5952	25.00
	Westmoreland	134–136		
		138–139	5953–5957	25.00
	Center	23–24	5958–5959	10.00
	Tioga	22	5960	5.00
	Butler	52	5961	5.00
	Jefferson	50–51	5962–5963	10.00
	Blair	78–84	5964–5970	35.00
	Bedford	13–16	5971–5974	20.00
	Cambria	128	5975	5.00
	Juniata	11	5976	5.00
	Northampton	101–119	5977–5995	95.00
	Clearfield	65	5996	5.00
	Northampton	120	5997	5.00
(1922)	Bedford	16	7325	5.00
April 3	Bucks	67–73	5998–6004	35.00
	Cambria	129–130	6005–6006	10.00
	Northampton	121–122	6007–6008	10.00
	Somerset	43–44	6009–6010	10.00
	York	110–113	6011–6014	20.00
	Union	16	6015	5.00
	Luzerne	112–209	6016–6113	490.00
	Philadelphia	1251–1500	6114–6363	1250.00
	Northumberland	46–54	6364–6372	45.00
	Bradford	42–44	6373–6375	15.00
	Washington	112	6376	5.00
April 4	Chester	58–60	6377–6379	15.00
	Huntingdon	33	6380	5.00
	Venango	45	6381	5.00
	Northampton	123	6382	5.00
	Mercer	69	6383	5.00
	Armstrong	49–52	6384–6387	20.00
	Westmoreland	140	6388	5.00
	Mifflin	25	6389	5.00
	York	114	6390	5.00
	Tioga	23–24	6391–6392	10.00
April 5	Westmoreland	141	6393	5.00
	Luzerne	210–213	6394–6397	20.00
	Lehigh	84–104	6398–6418	105.00
	Clinton	24	6419	5.00
	Cambria	131	6420	5.00
	Erie	114–125	6421–6432	60.00
April 6	Bucks	74	6433	5.00
	Luzerne	214	6434	5.00
	Northampton	124	6435	5.00
	Lancaster	101–106	6436–6441	30.00
	Columbia	33–34	6442–6443	10.00
	Tioga	25	6444	5.00
	Potter	11–12	6445–6446	10.00
	McKean	38	6447	5.00
	Lackawanna	183–196	6448–6461	70.00
April 7	Venago	46–47	6462–6463	10.00
	Luzerne	215–218	6464–6467	20.00
	Northampton	125	6468	5.00
	Fayette	74–75, 91–100	6469–6480	60.00
	Lawrence	39	6481	5.00
	Westmoreland	142	6482	5.00
	Jefferson	52–53	6483–6484	10.00
	Greene	28	6485	5.00
	Beaver	59–60	6486–6487	10.00
	Fayette	101–102	6488–6489	10.00
	Armstrong	53	6490	5.00
	Cambria	132	6491	5.00
	Westmoreland	143–144	6492–6493	10.00
	Cambria	133	6494	5.00
April 11	Washington	113	6495	5.00
	Northampton	126	6496	5.00
	Cambria	134	6497	5.00
	Berks	135–136	6498–6499	10.00
	Lawrence	40–41	6500–6501	10.00
	Potter	13	6502	5.00
	Westmoreland	145	6503	5.00
	Fayette	103–109	6504–6510	35.00

	Columbia	35	6511	5.00
April 12	Lackawanna	197–211	6512–6526	75.00
	Lawrence	42	6527	5.00
	Luzerne	219	6528	5.00
	Allegheny	1169–1203	6529–6563	175.00
April 13	Venango	48–49	6564–6565	10.00
	Northampton	127	6566	5.00
	Potter	14	6567	5.00
	Delaware	85	6568	5.00
	Washington	114–118	6569–6573	25.00
(1922)	Washington	125	7326	5.00
	Philadelphia	1501–1777	6574–6850	1385.00
(1921)	Philadelphia	2060	7348	5.00
(1922)	Philadelphia	2021	7327	5.00
	Erie	126–130	6851–6855	25.00
	Tioga	26	6856	5.00
April 14	Bucks	75	6857	5.00
	Columbia	36–39	6858–6861	20.00
	Armstrong	54	6862	5.00
	Delaware	86	6863	5.00
	Westmoreland	146	6864	5.00
	Lackawanna	212–217	6865–6870	30.00
April 16	Dauphin	152	6871	5.00
	Venango	50	6872	5.00
	Luzerne	220–222	6873–6875	15.00
	Lawrence	43–50	6876–6883	40.00
	Somerset	45–46	6884–6885	10.00
	Chester	61–68	6886–6893	40.00
April 17	Huntingdon	34–35	6894–6895	10.00
	Fayette	110–114	6896–6900	25.00
	Philadelphia	1778–1825	6901–6948	240.00
April 18	Dauphin	153	6949	5.00
	Blair	85	6950	5.00
	Potter	15	6951	5.00
	Westmoreland	147	6952	5.00
April 19	Chester	69	6953	5.00
	Cambria	135	6954	5.00
	York	115–116	6955–6956	10.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

LEGISLATION

The customary rule is adhered to in the present session of the Legislature in that when a bill referring to the duties or privileges of the medical profession is introduced, some one promptly objects.

It was with some confidence that the amendments to the Workmen's Compensation Act in House Bill No. 846 were introduced in the Legislature because of the conditions and no apparent opposition. However, at the last moment prior to final passage in the House a demand was made on the part of certain people of the state for a hearing, which was held on Tuesday, May 1st. At this writing we cannot advise our readers as to the present status of the bill, but would urge prompt action on the part of those interested in industrial surgery by wiring the representatives and senators requesting the passage of the amendments to the Workmen's Compensation bill as they appeared in the original draft in the House of Representatives.

During the week of April 23d the members of the profession received Bulletin No. 2 issued by the Medical Legislative Conference. This pamphlet describes in brief the location and status of most of the bills of interest to the profession.

Senate Bill No. 242

(Known as the bill to provide for a State Board of Osteopathic Examiners and to examine and regulate osteopathic surgeons.)

This bill at the time of writing this report has been reported out in the Senate and referred back to the Committee for printing. We have received copies of this amended bill and find that the following changes have been made:

It provides that candidates for a license to practice osteopathy in the State of Pennsylvania must present to the Board of Osteopathic Examiners one of the following credentials: "A diploma of graduation from a reputable college or university granting the degree of bachelor of arts or science or equivalent degree or a diploma of graduation from an educational institution maintaining a four years' course of study equivalent to a standard four-year high school course that is a State Normal School or a high school a seminary an academy or a college preparatory school or a certificate of having passed examination for admission to the freshman class of a reputable literary or scientific college or university or a certificate of having passed an equivalent examination conducted by the Bureau of Professional Education * * * That the preliminary education shall include one year's credits in physics, chemistry and biology as approved by the Bureau of Professional Education."

After the first day of July, 1928, all applicants for license before the State Board of Examiners must furnish the aforesaid proof with the exception of the privilege of coming before the Bureau of Professional Education for examination for a preliminary certificate.

Section 11 of this amended act says: "Every license to practice as an osteopathic physician issued by the State Board of Osteopathic Examiners shall authorize the holder thereof to practice osteopathy in all its branches including minor surgery and obstetrics without restriction as the same is herein defined and taught and practiced in the legally incorporated reputable colleges of osteopathy but it shall not authorize the holder thereof to practice operative surgery without obtaining an additional license to practice such surgery as provided in section 11 (b) of this act."

Section 11 (b) states "Any person licensed to practice osteopathy in this State and desiring to enter upon the practice of operative surgery

as taught and practiced in the legally incorporated reputable colleges of osteopathy may deliver to the Director of the Pre-Professional and Professional Credentials Bureau of the Department of Public Instruction upon the payment of a fee of twenty-five dollars a written application for license together with satisfactory proof in such form as may be required by the Osteopathic Surgeons' Examining Board that the applicant has served for a period of not less than two years as an interne or assistant surgeon in an approved osteopathic hospital which shall have at least ten beds per interne," etc.

Section 11 (a) states "For the purpose of licensing osteopathic physicians to practice operative surgery until other provisions are made by the General Assembly there is hereby created in the Department of Public Instruction a special examining board to be known as the Osteopathic Surgeons' Examining Board. Such board shall consist of the director of the Pre-Professional and Professional Credentials Bureau of the Department of Public Instruction who shall be a member ex-officio and four other members who shall be appointed by the Governor. Two of such members shall be appointed from four persons nominated by the Bureau of Medical Education and Licensure of the Department of Public Instruction who at the time of their appointment are licensed and qualified to practice medicine and surgery and have practiced the same in this Commonwealth for a period of not less than ten years immediately prior to their appointment and two from four persons nominated by the Board of Osteopathic Examiners who at the time of their appointment are licensed and qualified to practice osteopathy and have practiced the same in this Commonwealth for a period of not less than ten years and who have practiced surgery for a period of not less than five years immediately prior to their appointment."

It also provides that "Any osteopathic physician who has been practicing operative surgery for a period of not less than ten years shall not be required to take the examinations required by this section and shall be eligible to appointment as a member of the Osteopathic Surgeons' Examining Board."

Section 12 provides that "certificates when made or issued by osteopathic physicians licensed under the laws of the Commonwealth shall be accepted by the persons partnerships corporations officers boards bureaus or departments to whom the same are made with the same force and effect as reports or certificates issued by physicians of other schools and such osteopathic physicians shall be entitled to the same fees and compensation as is provided by law for physicians of any other school."

The provisions of Section 12 would, therefore, permit the osteopathic physician to treat cases under the Workmen's Compensation Law as well as issue all other certificates or reports. This act if passed would give the osteopathic physician the same rights and privileges as have all of the medical profession with the exception of certifying to examination made of persons suffering from insanity.

In many ways Senate Bill 242, if it becomes a law, would materially change the preliminary premedical and postgraduate course of instruction of the osteopathic practitioner. It is sincerely hoped that all measures relative to the practice of the healing art may tend upward in requirements and that eventually all may come under the direction of a "one board" law.

On account of the lack of space it is not possible to discuss individually the merits or objections to the acts referred to in the Legislative Bulletin, but there is still an opportunity for many changes to be made in legislation in the House and Senate prior to adjournment.

This department of the Atlantic Medical Journal will be open for communications and requests for information by letter, and we would again urge the members to keep closely in touch with the section of the Journal relative to legislation affecting the medical profession.

APPLICATION OF SWIMMING POOL SANITATION TO THE PUBLIC BATHING BEACH

Willis P. Baker, Washington, D. C. (*Journal A. M. A.*, March 31, 1923), describes the manner in which a popular bathing beach is made safe for bathers so far as the spread of infections is concerned. This is accomplished by means of chlorination of the water. Several hundred thousand persons bathe at this beach each season, and no water-borne infections traceable to such bathing have occurred during the last two seasons. No objection to the chlorin in the water has been made by the bathers. If the concentration of free chlorin is kept below 0.5 part per million, its presence is not very detectable by the average bather. Life guards who have been in the water more or less every day for two seasons have shown no irritation of the skin or mucous membranes. Regulations at this beach exclude persons suffering from contagious diseases. While such a regulation seems desirable, its strict enforcement does not seem practicable when applied to the general public. The same may be said of the shower bath preliminary to entering the beach. The question of expectoration and cleansing of the nostrils while bathing seems more serious, and yet 90 per cent of all bathers do this frequently and quite unconsciously. It is thought that this chlorin treatment takes care of any ordinary soiling of the water by infected bathers along with the destruction of bacteria from the constant sewage pollution, and that its continuance represents a cheap insurance against water-borne epidemics.

County Medical Societies

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

* Deceased.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

May, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—MARCH-APRIL

At joint meeting of the Dauphin County Medical Society and the Harrisburg Academy of Medicine Dr. Thomas S. Blair entertained a large and appreciative audience met together in honor of his long and useful residence in Harrisburg. Dr. Blair recently resigned as Chief of the Bureau of Drug Control of the State Health Department, and at the present writing has left with his wife to take up their residence in California. In his farewell address the doctor expressed his deep regard for the many friends and associates he had here, interspersing his talk with several amusing stories and anecdotes. He gave high praise to the new Commissioner of Health and his deputy, and at the same time expressed his disapproval of the reduced appropriation to the Department of Health as contained in the proposed budget. As he ably explained, the work of the Health Department had been thoughtfully and efficiently developed by experts through the preceding years, keeping pace with science and growing needs of the state, and hence it would be most untimely and dangerous to have the work suddenly curtailed, with the risk of being found helpless before a sudden epidemic or some other phase of the work that would require immediate attention.

The unification and coöperation of the medical profession throughout the country was enjoined upon the members as the only way of self-protection and of serving as a positive force in the affairs of the nation.

Several of the members of the society gave voice to the valuable service Dr. Blair has rendered not only to the community but to the state.

Dr. Blair's absence will be keenly felt.

The April meeting of the Dauphin County Medical Society was devoted to a discussion of the various bills before the legislature of interest to the medical profession. Dr. Frederick L. Van Sickle, Executive Secretary of the Medical Society of the State of Pennsylvania, was the speaker, and being thoroughly familiar with legislative proceedings, discussed each bill separately in a most illuminating and comprehensive manner, explaining the pros and cons of each proposition, how far the bills had progressed, and their probable fate. Of chief import and interest was the Osteopathic Bill, number 242, and the bill amending the present Compensation Law as it affects the medical profession. The Osteopathic Bill at this time was in the hands of the Committee on Public Health and Sanitation, and a public hearing had been held on the same afternoon, when five prominent representatives of the medical profession from Philadelphia and Pittsburgh submitted their objections to the bill, while the osteopaths plead their cause. It was somewhat disappointing to note that while the regulars were effective speakers on the general question of regular medicine versus osteopathy they were obviously not as familiar with the particulars of the proposed bill or with the former bills governing the practice of the osteopaths as they should have been, and hence were not sufficiently prepared to meet and rebut the arguments of the osteopaths which came later.

Dr. Van Sickle read the proposed amendment to the Compensation Law, which apparently will render it immune to any further misinterpretation.

A short general discussion by the members and further elucidation by Dr. Van Sickle concluded the meeting.

W. M. Kunkel, M.D., Reporter.

ERIE—APRIL

The Erie County Medical Society held its regular monthly meeting April 3d. Dr. Wm. E. Lower of Cleveland addressed the meeting on "Factors Which Influence the Results of Surgical Operations." He said in part: With few exceptions, the technique of operations for pathological conditions which ordinarily present themselves to the surgeon has practically

become standardized. Once surgical treatment is decided upon in a given case, we are prone to forget that the individual patient still presents problems which cannot be met by operation alone. In other words surgical treatment involves far more than the period occupied by the operation itself. The results of surgical treatment should include a consideration of the factors which enter into the preoperative and postoperative periods. To consider the mortality rate of operations without considering the condition of each patient when operation was performed and what may or may not have been done to bring the patient into the best possible condition for the operation or to restore him after it, does not give a fair basis for decision.

We know that practically any surgical procedure upon almost any organ or tissue of the body is now anatomically possible. Many organs of the body can be removed and life will continue in their absence. Mortality rate pertains largely to the management of each case by the surgeon, the nurse, the interne, and all those to whom any portion of the care of the patient before or after operation has been confided. The age-old concept, that when one of the members of the body suffers all the other members suffer also, acquires new emphasis, and its reverse is equally important, namely, that whatever contributes to the welfare of the organism as a whole will contribute also to the welfare of that portion of the organism in which the pathological condition exists. It becomes essential, therefore, to study the effect upon the organism as a whole of each of the factors which enter into the period of hospital care: the surroundings of the patient from his entrance into the hospital to the moment of the operation; the anesthetic; the environmental factors during the postoperative period. Multiplicity of appliances for diagnosis and treatment are valuable, often essential adjuvants, but of themselves alone are of no avail. The war demonstrated what could be accomplished with a minimum of appliances by the skill of surgeons and nurses. To certain patients coming from limited environments the very term "hospital routine" may be a definite barrier to the best progress. A wise nurse who sees each patient as an individual can accomplish wonders with such patients. For the best results the surgeon, interne and nurse should interpret hospital rules in terms of the need of the individual patient. The hospital period is only one factor; every phase of the patient's life and habits will influence his progress. The power of the patient's physician and of the surgeon upon his first contact with the patient to inspire faith and confidence in the result is an important factor. Christian Scientists and "Coueists" have only one truly valuable conception upon which their teachings are based, of which we can and should avail ourselves. I do not mean that we should ever *promise,* as do many chiropractors, osteopaths and followers of other cults, that certain cure is to result from the procedures we recommend; but we should inspire in our patients confidence that submission to the procedures and adherence to the regimen which we advise is their best hope.

Correctness of diagnosis, only, justifies surgical procedure. It is not enough to know how to do certain operations, but also when to do, and just as important when not to do. We no longer depend on clinical signs and physical examination alone. We have the stethoscope, bronchoscope, cystoscope, chemistry of the blood, urine and other body fluids and tissues. The application of the x-ray to all fields of medicine and surgery is being constantly extended. The surgeon should avail himself of every method for establishing with the utmost possible certainty the differential diagnosis.

The slightly wounded, should receive as painstaking attention as the more seriously injured. We have no way of comparing the result in civilian life, of the neglect of apparently trivial injuries with the same condition during war, but the economic loss to the community is undoubtedly very great. In addition every surgeon can recall many occasions on which he has been called to deal with untoward results following operative procedure in the hands of inexpert operators. The catastrophes which may follow very serious imperative operations are often unavoidable and excusable, but the loss in time and life as a result of inexpert performance of minor operations under untrained anesthetists is not excusable.

Researches over many years have shown that every activation of the organism is at the expense of cells of the central nervous system and of the liver. This is also true of the activations of every-day life. The usual period of rest and sleep restores these cells after the usual daily activities. Any extraordinary activities, however, may drain the cells to such a degree that complete restoration cannot be affected by the normal period of sleep. Activations due to disease processes, therefore, going on over weeks and months in addition to the normal drain of daily life may reduce the cells of these essential organs to such a degree that special measures for their restoration must be taken if they are successfully to withstand the extraordinary activities attendant upon the psychic strain produced by the operation itself. Psychic stress is more immediately exhausting than any other kind of activation. Therefore the prime requirement of a patient entering a hospital for operation is to be mentally reassured; to be in an atmosphere of peace and hopefulness; to substitute confidence in place of fear.

Experimental studies have shown that a condition of intracellular acidosis is present in exhaustion from any cause. The correction of intracellular acidosis demands that the cells be supplied with abundant water. As the acids accumulate in the cells their respiration is interfered with and respiration is as essential for each individual cell in the body as it is for the organism as a whole. Oxygen is supplied to the cells primarily by the blood cells; the protection of the internal respiration of the cells and the combating of an intracellular acidosis, therefore, demand an abundant supply of whole blood. An abundant supply of water must be assured. In some cases 2,000 to 4,000 c.c. every twenty-four hours by hypodermoclysis is the quickest way of getting in the water. As a routine measure the blood of every surgical patient should be grouped before operation, that there may be no delay if the need for transfusion develops. It may be, however, that even with enough fluid the mechanism of circulation itself is not equal to its task. Static blood in the vessels is of no account; the myocardium must be reinforced. This may be accomplished by the preoperative administration of tincture of digitalis. Nervousness must be relieved and sleep and rest promoted. Bromides may be given or morphin if acidosis is not present or impending. Morphin prevents acidosis, but if acidosis is present morphin prevents its neutralization. Violent catharsis should be avoided; the withdrawal of fluids and consequent fatigue is prejudicial, more particularly so in old people. A gentle enema is all that is required. In regard to anesthetics, intracellular acidosis is increased under ether and by its lipoid solvent action the cell membranes are broken down.

The diminishing power of oxidation in the cells of the central nervous system is shown by a progressively decreasing temperature. Nitrous oxid does not have these disadvantages and so is to be preferred as the inhalation anesthetic. Researches have shown that even in the unconscious patient the traumatic stimuli reach and affect the cells of the central nervous system, a local anesthetic should be used to avoid this source of increased exhaustion.

In some cases the multiple stage operation is to be advised, the interval between operations being determined by the degree of physical stability established. The postoperative period also should be strictly individualized and does not terminate with the patient's departure from the hospital. No patient should be considered surgically a good risk unless every protective measure has been applied in his environment and within his own tissues. The final note on the patient's hospital record "discharged well," in view of the brief postoperative period, can only mean that the anatomic repair of the lesion has been accomplished and does not interpret the patient's economic status which, after all, should be the final criterion. If the child cannot enter school, if the mother cannot take up the cares of her household and family, if the man cannot enter upon the duties of his trade or profession, then we should not consider that our treatment is at an end until we have used every means to restore the economic condition of the patient.

Anna M. Schrade, M.D., Reporter.

LUZERNE—MARCH-APRIL

The regular meeting of the Luzerne County Medical Society was held in the Medical Society Building on March 7th, 1923, at 8:30 p. m. The meeting was called to order by President N. L. Schappert.

It was unanimously decided to give a testimonial dinner in honor of Dr. Charles Miner, who was appointed by Governor Pinchot as State Commissioner of Health.

Dr. L. L. Rogers, Jr., gave an exceptionally good illustrated lecture on "Infection of the Accessory Sinuses," which created considerable comment.

The second regular meeting of the Society was held on March 21st. Dr. R. R. Janjigian, pathologist of the Wilkes-Barre City Hospital, read a very interesting paper on "Urging Postmortems," making an appeal to physicians to try to obtain more postmortems in an effort to further the cause of medicine. Dr. Janjigian stated that the great medical discoveries of the past have been made through the comparison of the clinical examination of patients before death and a postmortem after death. The paper was discussed by several of the physicians.

The meeting of April 4th was held in the Medical Building and was called to order by President Schappert at 8:40 p. m.

Dr. Albertson, District Councilor, Scranton, discussed several of the bills which are coming before the Legislature in the near future.

Dr. H. B. Gibby spoke on Diphtheria Week and announced that in this district the week of April 23d to 28th would be designated as "Diphtheria Week," and spoke about the plans for getting this subject before the public.

Dr. L. C. Mundy read a very interesting paper on the "Susceptibility to Pneumonia of Patients Operated Upon With Lesions in the Upper Abdominal Region." This paper was discussed by Drs. A. Trapold, S. P. Mengel, L. A. Sheridan, Charles Long and J. E. Scheifly. The discussion was closed by Dr. Mundy.

H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

March 14th

SUBJECT: SYMPOSIUM ON DIPHTHERIA

David Reisman, M.D., president, in the chair.

Dr. James G. Cumming: "Diphtheria as a Public Health Problem."—The problem is to reduce the three hundred thirty-three deaths and three thousand cases of diphtheria in Philadelphia yearly. The 1920 report of the Bureau of Health states that in 1880 the mortality from diphtheria was 53%, while in 1897, the first year that diphtheritic antitoxin was dispensed by the Board of Health, the mortality was reduced to 27%, and there has been a steady decrease in the number of yearly deaths since.

Dr. Cumming demonstrated with charts the fact that there are comparatively few deaths during the first year of life, that it is in the second year that the greatest number occur. After that the incidence declines, so that there are scarcely any after twelve years. A larger proportion of cases could be saved if infants were immunized in the first year instead of waiting until they are of school age. The high mortality rates are due partly to the failure of parents and physicians to recognize, report, and treat diphtheria cases. The Bureau of Public Health can immunize only twelve of the thirty-two thousand children born yearly, so that it is necessary for the practitioner to assist in this work.

Dr. E. L. Bauer: "The Use of the Schick Test in Stamping Out Diphtheria."—The use of toxin-antitoxin has given an added impetus to the subject of diphtheria prevention. As children grow to adult life, they become actively immunized to diphtheria, the process being slower in some than in others, and influenced by exposure. The same immunization can be accomplished in six months by the use of toxin-antitoxin, and will be permanent. Records show that only one individual is immunized for every case. An exposed individual should be offered passive immunity. It takes from three to six months to develop active immunity with three weekly injections of one c.c. each. Parke has reduced the danger from anaphylaxis by eliminating foreign proteins without changing the immunizing qualities of the serum. The Schick test is used to detect immunity, and it has been learned that country people are as a rule more susceptible than those living in cities. The test is not applicable for those exposed to diphtheria, since seventy-two hours must elapse before the results are known. The present methods do not deal with carriers, and until active immunization is used universally, that problem will have to be reckoned with. The application of methods is primarily a public health matter, with the assistance of physicians, and the good will and aid of the public. Diphtheria is a disease that can be eliminated by prophylaxis.

Discussion: In regard to compulsory measures for the use of toxin-antitoxin, it is not too great a burden for children to bear. The danger in the use of the serum is almost nil now. The carrier problem must be emphasized.

Dr. Bauer: The Schick test should be used to follow up the toxin-antitoxin to check up immunity, and those still susceptible should be immunized. This should supplement other methods of protection against diphtheria.

Dr. S. S. Woody: "The Treatment of Diphtheria."—The specific treatment for diphtheria is the giving of antitoxin early and in sufficient doses; therefore early diagnosis is of great importance. The most prompt action can be obtained by intravenous injection, but the danger from too sudden an introduction of foreign proteins into the circulation must be borne in mind. This method should be used in selected cases only, and anti-anaphylactic treatment can be given before the antitoxin. The amount of antitoxin to be given can be gauged only by the general condition of the patient, the extent of the local lesion, and the length of time he has been ill. The dose is reduced one-half or one-third for infants. Diphtheria antitoxin is fatal in cases of status lymphaticus and in asthmatics, but usually there is no contra-indication to its use. If in doubt, a sensitizing test may be done by rubbing a little of the serum into a scarification of the skin.

After giving the antitoxin, complete and prolonged rest is essential, and careful attention to diet, the bowels and the kidneys must be given. The heart should be closely watched for danger signals. The general action of antitoxin is to neutralize the toxins and prevent the development of systemic manifestations, and locally to lessen edema and remove the membrane.

The greatest danger in laryngeal types is from exhaustion or asphyxia, when time is too short to get relief from antitoxin. Fresh air, steam, turpentine stupes may help, and when the patient loses strength, intubation or tracheotomy is necessary.

Heart complications should be prevented by complete rest. Paralyses must be treated symptomatically. In treating carriers, tonsils and adenoids should be removed. Early diagnosis of diphtheria is very important.

General Discussion: Physicians should not delay giving antitoxin, waiting for a positive culture, as it will do no harm if the culture is negative.

Dr. Woody: The intramuscular dosage is ten to fifty thousand units, while the intravenous dose is usually fifteen to twenty thousand, supplemented with intramuscular injections.

Dr. W. D. Stroud: "The Importance of Follow-up Work in Connection with Diphtheria."—Dr. Stroud, giving credit to Drs. Mitchell and Woody, whom he had consulted, said that accurate statistics concerning the sequelæ of diphtheria were difficult to obtain, but it is generally understood that in six months all sequelæ have disappeared. If a heart case gives a history of having had diphtheria, need it be a foregone conclusion that the heart was damaged by that infection? It may be a factor in the chronic heart disease of later life. When a patient is discharged from the Philadelphia Hospital for Contagious Diseases, he is given a physical examination, and the parents are notified of any defects found. The health centers are informed, and they follow up the case.

Discussion: In diphtheria, one must be on the lookout for cardiac and nervous system involvement, and prophylactic measures are important.

Dr. C. Y. White: "The Municipal Laboratory as an Aid in the Control of Diphtheria."—Definite outfits for the taking of cultures can be obtained at Police Stations, and will be sent to the City Hall if taken before nine p. m. The City Hall office is open twenty-four hours. Care should be taken not to use media that are too old. The first culture in a case is positive only in seventy per cent, so that a physician should not regard a negative culture as diagnostic. Anaphylactic reactions are very rare, and do not seem to occur in diphtheria cases. Removing tonsils and adenoids is recommended in the case of carriers.

Discussion by Dr. Kolmer: The culture method is an aid in diagnosis, and the laboratory will help prevent diphtheria. Doctors need not fear to culture, for the guinea pig test is absolutely reliable. They are cautioned to culture deeply, because of the danger of the first negative culture.

Dr. Cairns: The Schick test should be standardized as to technique so that any physician can take hold of it.

Dr. Kahn: In Philadelphia, physicians can be confident that Dr. White's "positive" report from the City Laboratory means a virulent organism, one that will kill a guinea pig.

Dr. White: All primary positives on Monday and Thursday are automatically pigged, to determine the virulence. Twelve years ago there were about thirty types, while now they have been reduced to nine. Less than ten per cent of the cultures coming in are positive.

March 28th

SUBJECT: SYMPOSIUM ON "EXPERT TESTIMONY"

Dr. David Reisman, president, in the chair.

In his opening remarks, Dr. Riesman said the meeting had been called so that some concrete, practical good might come from the discussion.

Dr. Charles W. Burr: "The Physician as Witness."—An ordinary witness often acts as an expert by giving his opinions as well as relating mere facts. The courts have a poor opinion of the medical expert, and will accept almost any physician. It has been suggested that the expert be appointed by the judge, but it seems unwise to assume that the average judge is competent to choose, and would be unaffected by personal friendship and politics. It would be still more complex if the expert were to be appointed by the court. Often a physician is called because he is the attendant of the person on trial, and is used as an expert by the side that called him.

One type of expert sad to meet is the man with no standing in the profession giving opinions as an expert in all branches of medical work. The influence of the subconscious mind or bias is a great obstacle in nearly every case with any personal interest. The man who delivers a clinical lecture on the stand has no great weight with the jury. The dangerous witness is the one well trained, with a twisted moral sense, who is out for the highest fee. Others disregard the legal meaning of the word "insanity."

It has been proposed to prohibit the use of the hypothetical question, with the idea that it would be better to ask the jury to decide, allowing the medical man to weigh all evidence. The ideal witness has no personal interest, quietly states his opinions with the reasons for them, and learns the evidence of the other side before taking the position as witness.

The difference in the legal and medical definitions of insanity often causes trouble. A physician can determine delusion and dementia, but cannot decide whether or not a patient is more liable than others to undue influence. A new kind of expert is being used now to determine the responsibility of the patient—the "clinical psychologist" and the Binet-Simon tests. In juvenile courts, medical questions are left to medical men. The wise witness never loses his temper,

gives opinions based on reason, not on feeling, and is sure of himself.

Owen J. Roberts, Esq.: "Diagnosis and Possible Remedies."—In any system of jurisprudence, the jury attempts to find facts, which the court applies. "Mere facts" are the raw material of eye witnesses. The jury reasons from mere facts to conclusions or true facts. The ordinary jury has no scientific experience or knowledge, and expert testimony is necessary in order that the proper conclusions may be drawn. This procedure has certain limitations, such as the fact that deductions and not primary facts are given the jury, which cannot follow the reasoning processes, and that there are often contradictions. The only safeguards are cross-examination and the common sense of the jury.

It has been suggested that the expert be made impartial by withholding fees, or that he be chosen by the court and the fee paid by the court. No expert can help form conclusion as to which party is right. Shall experts be examined by council? The meeting of experts might become a star chamber proceeding, and would also be susceptible to abuses. The present system is the best, with cross-examination by each side. An additional element might be made possible by law, by allowing the judge to call in his own expert. Abuses might creep in here also, but most men are honest.

The Hon. T. F. Jenkins: "Expert Testimony."—The question of expert testimony is something obscure to the ordinary mind, and yet everyone in daily life is continually using expert witnesses. The expert must be competent in his line, must possess sound judgment, and above all, must be honest. The jury must determine what men can be relied upon. There is necessarily much conjecture in medical expert testimony, and there is divergence of opinion. The hypothetical question often leaves out facts, and a man ceases to be an expert witness if he agrees to answer "Yes" to such a question. Every medical man called upon to testify, should acquaint himself with the real facts. Preparing a question with counsel has led to the remark that medical experts show such bias that their testimony cannot be relied upon.

Discussion by Ralph B. Evans: At the present time, medical witnesses are not satisfactory to the medical and certainly not to the legal professions. The real remedy lies with the bar and the medical profession themselves. The universal expert on every branch of medicine is the man from whom we suffer most and want to drive out of business. There is already some improvement in that respect, but the average doctor does not appreciate what he can do. Accident cases are often tried eighteen months to two years after their occurrence, when the family physician has only a vague recollection of the facts. He often gets the history from the lawyer five minutes before going on the stand, and tells what the plaintiff tells him he did at the time. Physicians should keep accurate records, and bring them to court if necessary. Vice exists not so much in expert opinion, but in the false foundations on which it is based.

Dr. D. McCarthy: There would be no trouble if good members of the bar should choose good medical men. The bar considers one who testifies often a good expert, while doctors know that he can't be good if he has so much time to testify. Testimony ought to be as united as it is in a consultation. A safe way to get facts is by means of a commission composed of a doctor, a lawyer and a business man. There is no reason why the hypothetical question should be answered, or that the witness need not tell the whole truth. The fault lies in the fact that the lawyer will not bring out the other side. Most doctors want to tell the truth and will do so if asked the proper questions. The attorney in the case has a consulting expert at his side, a biased help to assist in asking questions. Opinions are most often not directly asked.

Mr. E. A. Abbot: There would not be so much criticism and contention if there were more honesty and knowledge of the subject on the part of lawyers and doctors. It is almost impossible for some doctors not to be partisan, especially in negligence cases. If every doctor would refuse to testify the way the lawyer wants him to, regardless of facts, matters would be helped. Lawyers must coöperate with doctors who want to do what is decent and legal. If the right kind of questions and facts are put to the honest doctor, you will get the right answers.

Dr. S. Leopold: "From the Psychologist's Viewpoint."—There is not much use for expert testimony among judges, juries and lawyers. Sometimes the procedure, not the witness, is valueless and defeats its own purpose. The method of trial is in the nature of a combat, with the battle going to the stronger. Partisanship is at the bottom of the feeling against the expert. There is a wide gap between the old concepts of law and the modern trends in medicine, especially psychology. We are considering dementia præcox, etc., rather than abstracts, and are coming to a more intensive study of the individual and his problems. This is shown through juvenile courts and psychiatric clinics, where studies are made to find the influences in a delinquent's life, his family conditions, bad habits and environment.

General Discussion: In Germany, expert testimony is appointed by the judge to insure impartiality. A judge should have the right to call in help, for how is he to know whether or not a verdict is excessive?

Part of the difficulty lies in the contingent fee, which works for dishonesty and misery. A doctor cannot tell all he knows and thinks, which is a matter of the law, and not the expert's business. He is not a liar, but the lawyer wants to make him one.

Mr. Jenkins: It is not only the right, but also the duty of every witness to qualify the statements he makes in answer to a lawyer's questions, if he feels he is not telling the whole truth.

No prosecutor wants to condemn a person mentally deficient. He does not know, and wants the best advice. It might be practical and most beneficial to have a standard board appointed to establish the mental responsibility and deficiency of every person brought to trial.

Dr. Mills: Honesty is of the utmost importance, and is not brought about by statutes but by raising the tone of both professions.

Anna Ruth Winter, Reporter.

PENNSYLVANIA NEWS ITEMS

DIPHTHERIA WEEK IN PENNSYLVANIA

It is the desire of the Committee on Public Relations of the Medical Society of the State of Pennsylvania to obtain the results of the Diphtheria Campaign during the month of April. For this purpose may we ask that the district chairmen, through their vice-chairmen and county society secretaries, furnish the Secretary of the Committee with a brief résumé of

the work in each county? A compilation of these statistics will be of profit not only to the Committee but to those who have so kindly assisted in putting on the various programs. Address the Secretary, Committee on Public Relations, 230 State St., Harrisburg, Pa.

DEATHS

Dr. David B. Hand, of Scranton, who was graduated from New York University Medical College, New York, in 1870, died on April 1st, aged 75 years.

Dr. Eugene Stanley Hayes, of Wyoming, died on March 17th, aged 64 years. He was a graduate of Detroit Medical College, Detroit, Mich., class of 1881.

Dr. Homer B. Lathrop, of Springville, aged 67 years, died at his home on April 9th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1878.

Dr. David S. Hollenback, of Shamokin, a Civil War veteran, aged 87 years, died on March 20th. He was graduated from Jefferson Medical College of Philadelphia in 1882.

Dr. Charles S. Lindsay, of Pittsburgh, who was born in 1856, and was graduated from the Western Reserve School of Medicine, Cleveland, Ohio, in 1879, died on April 10th of angina pectoris.

Dr. Thomas J. Jacobs, of Somerfield, died of pneumonia on March 9th. Dr. Jacobs was born in 1853 and was graduated from New York University Medical College, New York, in 1878.

Dr. Frank Kurtz Addy, of Pittsburgh, aged 48 years, died on February 21st at Santa Barbara, Calif., of influenza and diabetes mellitus. He was graduated from Western Pennsylvania Medical College, Pittsburgh, in 1903.

Dr. Theodore Fassitt, of Philadelphia, a Civil War veteran, died suddenly of heart disease on March 12th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1869, and at the time of his death was 78 years old.

Dr. Ralph Ellis Leidy, of Boyertown, who served in the Medical Corps of the U. S. Army during the World War, died of pleuropneumonia on March 13th. Dr. Leidy was a graduate of Jefferson Medical College of Philadelphia, class of 1914, and at the time of his death was 36 years old.

Dr. I. C. Gable, of York, died on April 12th at the age of 74 years. Uremic poisoning was said to have been the cause of his death. Dr. Gable was graduated from the University of Pennsylvania School of Medicine in 1877. He was President of the Medical Society of the State of Pennsylvania in 1906 and served for eighteen years as a trustee. He was also county medical inspector for more than twelve years.

Dr. Miles L. Davis, of Lancaster, died on March 8th, following an attack of apoplexy. Dr. Davis was in his 79th year. He was graduated from the Bellevue Hospital Medical College, New York, in 1870, and was a veteran of the Civil War. He was Medical Director of St. Joseph's Hospital for 25 years and had the distinction of building the first crematorium in America, located in New York. His body was cremated at the Chelten Hills Crematorium, Philadelphia.

Dr. Samuel Whitehill Latta, of Philadelphia, aged 74 years, died on March 13th of heart disease. Dr. Latta was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1868. He was a member of the State Board of Medical Examiners, the American Public Health Association and a former president of the Pennsylvania Railroad Surgeons' Association, as well as chief medical examiner for the Pennsylvania Railroad, 1886-1918. During the Civil War he was assistant surgeon in the U. S. Navy.

Dr. Augustus Koenig, of Philadelphia, who was a former lecturer and instructor at the University of Pennsylvania, died on April 4th at the Jefferson Hospital following a physical breakdown. Dr. Koenig was born in 1870 and received his early education in Switzerland and Germany. In 1894 he was graduated from the University of Pennsylvania School of Medicine, Philadelphia. As a lecturer at the University his subjects were metallurgy, mammalian anatomy and normal histology. For the last five years he practiced medicine.

BIRTHS

Born to Dr. and Mrs. Stanley Barratt, of Wilcox, a daughter, Rachel Barratt, April 14, 1923.

Born to Dr. and Mrs. Harvey P. Feigley, of Quakertown, February 23d, a son, Donald Malcolm Feigley.

Dr. and Mrs. W. D. Gemmill, of Morganza, have announced the birth of a daughter, Eleanor Dempster Gemmill, April 8th, 1923.

ITEMS

Dr. James A. C. Clarkson, Secretary of the Mifflin County Medical Society, is in Europe.

Miss Elizabeth Cooke, daughter of Dr. and Mrs. Edwin S. Cooke, of Philadelphia, will become the bride of Horbert Morford early in June.

Dr. George E. de Schweinitz, of Philadelphia, President of the American Medical Association, sailed from New York on April 17th for Cherbourg and Southampton.

Dr. and Mrs. Edmund L. Smith, of Bedford, announce the engagement of their daughter, Miss Margaret MacVicker Smith, and William Foulke Satterthwait, of Landsdowne.

Dr. Withrow Morse, Professor of Physiological Chemistry in West Virginia University School of Medicine, has been elected to the position of professor of Physiological Chemistry and Toxicology in the Jefferson Medical College.

The engagement of Miss Mary Towle and Dr. Perry O. Hall, of Paxtang, Pa., has just been announced. Miss Towle is a graduate of Mt. Holyoke College. Dr. Hall is at present practising in Lilly, Pa.

The oldest practicing physician in Montgomery County, Dr. D. R. Beaver, of Conshohocken, celebrated his eighty-first birthday during the week of April 15th. His birthday was the occasion for the expression of good wishes from thousands of his townsmen and friends in the county.

Dr. David Marine, of the Montefiore Hospital, New York City, will deliver the Eighth Mellon Lecture entitled, "The Importance of Our Knowledge of Thyroid Physiology in the Control of Thyroid Diseases," before an open meeting of the Society for Biological

Research of the Medical School, University of Pittsburgh, on the evening of May 10, 1923.

A ROMANCE which began at the bedside of a patient they were both attending, culminated April 14th in the marriage of Dr. Fred W. Smith, of Philadelphia, and Miss Marie A. Rotzell, a nurse. Miss Rotzell was graduated from the Abington Hospital School for Nurses, and is the daughter of the late Dr. Willet E. Rotzell. Dr. Smith was graduated from Hahnemann Medical College in 1903.

DECISION of the board of corporators in regard to staff resignations and general upheaval caused at the Woman's Medical College of Philadelphia by their failure to retain Dr. Alice Weld Tallant, head of the department of obstetrics, will be announced soon, according to one of the members of the board. So far twenty-four resignations have been announced, including Dr. Clara Marshall, who was dean of the college for twenty-nine years, resigning this post in 1917. Dr. Marshall is the second emeritus professor to resign.

THE ANNUAL MEETING of the Allegheny County Medical Society was held on the evening of April 10th with Dr. Walter F. Donaldson, the President, presiding. Nearly 600 members were present. Following the election of officers and delegates a dinner was served at 7:45. The speakers of the evening were Dr. Charles H. Miner, Commissioner of Health; Mr. William A. Challener, Attorney; Dr. Howard C. Frontz, President-Elect of the State Society; and Dr. Lawrence Litchfield, President of the State Society. Following the business session the members were entertained with music and pictures of Yellowstone National Park.

THE PITTSBURGH COLLEGE OF PHYSICIANS held their annual dinner in connection with the Second Bedford Lecture, on April 26, 1923, at 6:30 p. m., at the Duquesne Club, Pittsburgh. The essayist for the evening was Dr. Sydney R. Miller, of Baltimore, Md., whose subject was "The Future of Our Profession." Although the College of Physicians is a Pittsburgh organization of physicians and surgeons, a great many out-of-town men reserved places for the lecture on account of the timeliness of the subject and the eminence of the essayist.

Dr. H. H. Turner, president of the organization, introduced the speaker. The dinner was under the direction of Drs. E. Bosworth McCready, Clement R. Jones and W. H. Robinson.

POLITICS AND PUBLIC HEALTH

The views of the New York State Department of Health as to the need of divorcing municipal health administration from partisan politics are expressed in the following editorial which recently appeared in *Health News*, the Department's official bulletin:

"The city of Savannah, Georgia, wants a new health officer. The position carries a salary of $4,800 a year. An automobile is furnished for official business. Like other city officers Savannah's Health Commissioner is entitled to retire on a pension after a certain term of service. All these inducements are to the point, and should play their part in attracting worthy candidates. But most notable of all, to our way of thinking, in Savannah's straightforward advertisement of its needs is the ringing declaration *'the City of Savannah guarantees the position of health officer free from political interference.'*

"Here is a heartening symptom of a notable advance in the interests of public health in America. When the spacious and lovable city of Savannah feels moved, perhaps even obliged, to put a guarantee of that kind into its call for a health officer, something has happened in this country and we are now at a point where recently we were not. The incident must be symptomatic. If this spirit exists in one of our cities, it must exist in others. Perhaps it is not too much to hope that we are entering an era in which enlightened communities are already beginning to realize that the cost of political muddling in public health is paid not merely with the dollars of the taxpayers but with their lives.

"Let Savannah's light so shine before all the cities of our land that those which still permit politics to dominate their public health services may be led to pause and consider and change their ways. Aside from every question of abstract principle it is the stupidest and most short sighted kind of practical politics for a city administration to neglect the interests of public health and to make an ugly duckling of its health department. If some cities cannot yet see their way, like Savannah, to abolish every vestige of political interference in their health work let them at least consider the out and out practical advantages for any city administration which will aim at a high record of attainment under modern standards in everything which has to do with safeguarding the lives of their citizens and which contribute to the demonstrable reduction of death rates."

CASE OF ECTOPIC PREGNANCY AT TERM WITH LIVING CHILD

A diagnosis of pregnancy of about eight months with impending eclampsia having been made, an immediate cesarean operation was performed by B. J. O'Neill and W. W. Crawford, San Diego, California (*Journal A. M. A.*, March 31, 1923). The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section. After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. The uterus was somewhat enlarged. The left tube was about 6 inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, beside being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament. The baby, a boy, weighed 6 pounds and 3 ounces (2,800 gm.), had hair and well developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of the left foot and a partial dislocation of the left hip, with indication of some bony pathologic process in the left knee. The postoperative course for both mother and child was uneventful. The authors conclude that the presence of a complete tube with the sac starting at the fimbriated end and the disappearance of the ovary would indicate that fecundation took place either in the fimbriated extremity of the tube or in the ovary itself.

THE

MEDICAL SOCIETY OF DELAWARE

EDITORIAL

OUR NATIONAL ORGANIZATION

That there seems to be a rather wide-spread dissatisfaction with some phases of the national medical organization, the American Medical Association, hardly the most ardent supporter of that organization will deny. Further, that there is perhaps some show of reason for this dissatisfaction will also hardly be denied. For many months past, in several places throughout the country, as it were, a "voice in the wilderness" has been raised in protest against our society, especially against the type of organization. We ourselves, while holding no brief for the protestants, and with absolutely no intention of pulling chestnuts from the fire for them, really feel that of the many complaints the following should receive the serious attention of the entire profession.

In the first place, the President has been reduced to a mere figurehead. His is a position of great honor, but due to the present organization, it can hardly be termed one of great trust or responsibility. He is *not* the head of the general work of the association; his work is chiefly ornamental and advisory.

In the second place, entirely too much power has been delegated by the House of Delegates to the Board of Trustees. This defect may not be a vital one so far as the practical workings of the association are concerned—we candidly do not believe that it is, and it may even be possible that the present arrangement is more efficient—but it certainly is not democratic and does not represent the opinion of the "man back home." Even the House of Delegates can sometimes fail to represent the man back home, as was evidenced only too plainly a couple of years ago when it pronounced that the American medical profession thought that there was no place for alcohol in their medical armamentarium, a view-point absolutely at variance with the facts as later determined. There is much more reason to doubt the ability of the Board of Trustees to represent the real feelings and aspirations of the profession than is the case with the House of Delegates. The only excuse for delegated authority of this kind is the possibility that the work may be done more quickly, more efficiently, and more economically by the smaller body than by the larger one. Yet we doubt it.

In the third place, the Board of Trustees in turn, has delegated entirely too much authority to the Editor and General Manager, placing in the hands of one man the workings of practically the entire concern. There must be leaders, of course, and of these leaders there must be a chief, but in the present instance it is alleged that this one chief dominates his Board instead of the Board dominating him. We are not in a position to express an opinion on this question, but it is one of such vital importance to every practitioner that the facts should be made known. If, as is alleged, this chieftaincy practically amounts to a dictatorship over men and money, the quicker we know it the better; and the quicker we act on it the better. We are firmly of the belief that the officials and Boards referred to are men of the highest integrity, and of more than average ability, yet if it be true that our organization has been pyramided to such a point that one man, however capable he may be, dominates inflexibly the entire organization, it is high time to change the organization. This would be no innovation; in fact changing the constitution of the American Medical Association has been its favorite pastime for these many seasons, a pastime that could be dispensed with without regrets. Let this next piece of tinkering be the last one for years to come.

With or without justice, the rank and file of our men as we come in contact with them seem to feel that the American Medical Association is an organization that exists solely for the sake of organization, and that it does not bestir itself very much in the interest of the ordinary doctor. This belief is founded chiefly on ignorance of many of the phases of the work done by the national society; yet, as an example, it is undeniably true that the organization has only recently established a Bureau of Legal Medicine and Legislation at Washington when it should have done so ages ago. The thing in our everyday world that means most

to the average man in practice is his economic position, yet until the recent past the economic phases of practice were sadly neglected, while the scientific side has been perhaps overstressed by the Association. Indeed, some of the work that has been done on the economic side has been a positive menace to the profession; we have in mind a past president of the American Medical Association who togged himself up in an army uniform long after the Armistice, and appeared before the legislature of his state to urge the passage of a bill for compulsory health insurance, when the state society to which he belonged had passed resolutions scathingly denouncing the proposed legislation. True, this was the act of an individual, but it happened that this individual had been considered one of the elect, and as such had been honored with the presidency of our national society. Parenthetically, let us ask, why is it that so many of our "shining lights," once they secure fame and fortune, become medical socialists, forgetting the ladder by which they climbed, and proposing to socialize the profession? Why?

The leading antagonist of the American Medical Association's organization is undoubtedly Dr. Charles J. Whalen, of Chicago, who is the editor of the *Illinois Medical Journal.* Being in the same city with the headquarters of the American Medical Association, his statements about the organization will be taken by many as containing inside or close-range information, and such may be the case; yet the very fact that poor Chicago houses both camps may account for the pointed statements he makes. In the December, 1922, number of the *Illinois Medical Journal,* he has a lengthy article entitled "The American Medical Association Becomes an Autocracy," which is interesting reading to say the least. Beyond the comments we have made in our opening paragraphs, we do not care to take sides either with him or against him, but we do wish two things: (1) We would like to see the *Journal of the American Medical Association* reprint his article intact, so that our entire membership can read it; and (2) we would like the same *Journal* to comment critically on his article. To the neutral person Dr. Whalen's trenchant pen makes out a plausible case for a sweeping reorganization of the Association, but we should like to hear the other side before we come to any conclusions.

W. E. B.

LEGISLATIVE NOTES

FALSE ECONOMY

At a time when all other states in the Union are increasing their expenditures on antituberculosis work; at a time when even the impoverished countries of Europe, like France, Italy and Russia, spend their last pennies, as it were, in organizing clinics and establishing sanatoria to fight consumption; at such a time, Delaware, in a fit of economy, is cutting down an inadequate appropriation, making it still more inadequate.

Delaware to-day is among the very few states that suffer from an excessive death-rate from tuberculosis. These states are: California, with 157.5 deaths per 100,000 population; Colorado, with 214.4; Kentucky, with 150.4; Maryland, with 148.6; Tennessee, with 158.7; and Virginia, with 142.2. (Figures based on 1920 statistics.) If we exclude California and Colorado because of the tremendous influx into these states of dying consumptives from all over the country, and if we make allowance for the other states because of the large colored population, we find little Delaware in the lead in helping the grim destroyer—the great White Plague—to do its worst by her citizens.

Delaware, with her 144.4 deaths per 100,000 population, is next door to Pennsylvania, with only 105 deaths and not so very far from New York, with 106.2. These two states were not always so fortunate. Their death-rate in 1911 was 136 for Pennsylvania and 156.3 for New York. But by persistent and intelligent effort, and the expenditure of large sums of money this high death-rate has been gradually reduced to the figures of 1920. Delaware has never spent enough money to bring about such results.

Economy in the expenditure of state funds is a most praiseworthy civic virtue, but what our legislators have done with regard to tuberculosis is not economy but rank extravagance. The average number of deaths from tuberculosis is about 400 a year. It has been estimated that the cost of each death is $250. This represents an expenditure of $100,000. There are about seven active cases of tuberculosis for each death. That means that we have in Delaware about 2,800 cases. As a rule, we may count on at least two years illness for each case, and at a minimum cost of $20 a year, $56,000 is the toll paid by the consumptives for medical care. As tuberculosis attacks persons during their most productive period, a definite economic loss is sustained by withdrawing the consumptives from production. This loss may be estimated

conservatively at $500 per year per case, or a total of $1,400,000.

In other words, the economic loss from tuberculosis in Delaware is at least $1,556,000 per annum.

We do not know the extent of the loss from tuberculosis in cattle, but are quite sure that it does not reach that figure.

We are quite willing to leave the odiousness of the comparison to a legislature that appropriates $32,000 for the eradication of tuberculosis in cattle and only $40,000 for the relief of the poor human consumptives.

Also we are quite willing to leave to the consciences of our legislators to place a money value on the suffering, the misery, the anguish, the distress, the pathos brought into a family by a member afflicted with tuberculosis. Let each legislator who favors economy visualize if he can what would happen if he or his wife, or his son or his daughter in the prime of life, were cut down by tuberculosis; and if he does visualize this let him recall the golden rule: "Do unto others as you would be done by."

With only $30,000 annually for the white consumptives, the commission will be compelled to drop back into the state of three years ago, when few clinics were held and few consumptives could be sent to sanatoria. With the exception of some $5,000 annually for office expenses, the entire white appropriation for 1921 and 1922 was expended on nurses, clinics and maintenance of patients at sanatoria.

By lopping off $15,000 from the appropriation the legislature has crippled the work to that extent, and thus retarded still further the progress so painfully made in gaining control over the "Great White Plague." A. R.

THE COMMISSION MERGER

One piece of health legislation which will please the physicians of Delaware is the merger of the Child Welfare and the Tuberculosis Commissions and the State Board of Health into the State Commission of Health and Welfare.

The three separately functioning bodies will, when the bill becomes operative, be merged into one commission of seven, four doctors and three lay members—women. This smaller body will take the place of twenty-seven commissioners. The apparent advantage of centralization is offset by the loss to the state of the interest and active participation in health matters on the part of twenty representative citizens who served on the commissions.

Delaware is unfortunate in not having representative bodies interested in public health. The Antituberculosis Society is a parlor organization concerned chiefly in maintaining a sanatorium, while a State Health Association formed three years ago had a single meeting. Consequently, there is no organized effort in Delaware to promote public health, and the public has remained indifferent to and ignorant of all health matters.

It will be difficult to carry out a satisfactory program in the face of such obstacles. The new Commission will be confronted with a number of grave problems.

The tuberculosis situation in Delaware is not altogether satisfactory. The death rate is still among the highest in the country and the provisions for hospitalization inadequate. The Child Welfare work has fallen in bad repute with the profession and is at the present time without any definite program. The Board of Health has been marking time, largely because of lack of sufficient funds and also owing to public indifference punctuated by active opposition whenever a progressive measure was attempted.

It will require considerable tact, perseverance, and above all disinterested devotion to the cause to solve the various problems connected with these health agencies. The medical profession of Delaware will be on trial and will be judged by what the four doctors of the Commission will be able to accomplish.

The Brogan Bill died, like the cat, only after the eighth life had been given up. Even then it seems likely to be resuscitated two years hence.

A. R.

DELAWARE NEWS ITEMS

Dr. L. A. H. Bishop has been reëlected president of the Dover Board of Health.

This past winter has been the busiest one in many years for the physicians about the state capitol.

Dr. L. S. Conwell, who has been secretary of the State Board of Health, will return to private practice in Camden, Del.

Dr. C. J. Prickett and Mrs. Prickett of Cheswold, have returned from a ten days' motor tour to West Virginia, their former home.

Dr. C. deJ. Harbordt and Mrs. Harbordt, of Dover, motored to Washington and Northern Virginia during the Easter holidays.

Miss Minnie Green from the Lankenau Hospital, Philadelphia, has succeeded Mrs. Elizabeth Johnson, as Superintendent of the Milford Emergency Hospital, Milford.

Miss Ella A. Derick, a graduate of the Hartford Hospital, lately directress of nurses at the Lebanon Hospital, New York City, has been appointed Superintendent of the Physicians' and Surgeons' Hospital, Wilmington.

Kent County Medical Society met at the Hotel Richardson, Dover, on March 7th, and again on April

4th. Papers were read by Drs. Joseph Bringhurst, Wm. Marshall and C. J. Prickett. The general discussion brought out many facts of interest to the average town and country doctor.

THE LEGISLATURE has just passed a bill to unite the State Tuberculosis Commission, the Child Welfare Commission and the State Board of Health into one organization to be known as the State Health and Welfare Commission. This will legislate the present State Board of Health out of business. The new Commission will consist of seven members, one physician to be appointed by the Governor from each of the four districts and three women at large, one of whom must be a "business woman." The new organization will take over all the duties and work of the three commissions that now function.

DR. WILLIAM C. BEHEN, formerly of Dover, Del., was recently honored by Poland in receiving the "Cross of the Valiant" for his services to the population and army. After the signing of the Armistice, Dr. Behen served with the rank of Major in charge of the American Red Cross Hospital Train No. 1 near Ostrow, during the Bolshevik drive on Warsaw, August, 1920. The citation was sent here by Major K. Mach, military attaché at the Polish Legation in Washington, through the instructions of Major-General P. G. Sosnkowski. During the World War, Dr. Behen served with the Twenty-Seventh Division and after the Armistice enrolled with the American Red Cross, being stationed in Serbia in 1919. He was later sent to Poland.

GENERAL NEWS ITEMS

THE APRIL number of the new *Hospital Buyer* has just come to hand. As this little publication maintains the standard of the Council on Pharmacy and Chemistry, it will doubtless be of real value to those who are interested in hospital supplies.

THE SALT LAKE COUNTY MEDICAL SOCIETY is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from the American Medical Association meeting at San Francisco. The stopover can be made inexpensive. The Society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake; and a visit to the great copper mines in this vicinity.

Large parties intending to make this stopover are requested to give us notice as far in advance as possible as to the number in party and length of time of stopover. Any inquiries relative to this matter may be directed to the Secretary, Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

UNDER THE AUSPICES of the Committee on Commemorative Journeys in France, 281 Fifth Avenue, New York, a visit to France has been outlined which coincides with the celebration of Louis Pasteur's Centenary. As this is sponsored by the French Government, it will give participants free access to many highly interesting official functions not ordinarily open to visitors.

Thus, in Paris, receptions will be tendered by the Pasteur Institute, by the School of Medicine, by the Department of Health, and by other civic and professional bodies. In Strasbourg, the International Hygiene Exhibition's officials will join hands with the municipal authorities in welcoming the party; while the three best-known thermal stations of France—Aix les Bains, Evian and Vichy—have extended a special invitation.

Both Dôle and Arbois, respectively Pasteur's birthplace and his youth's home town, will be visited, as will also the Argonne and other important battlefields and the great American cemetery at Romagne. Ten days of motoring through the Vosges, the Jura and the Alps will disclose the ravishing beauty of France's eastern ranges.

The time for the journey in France between July 11th and August 18th has been chosen because it is the period of the year when most professional men can best afford an absence from this country. Participants can leave New York as late as July 4th, and be back as early as August 25th. The Executive Committee have made arrangements for holding space on ocean steamers scheduled to leave on and about the above dates, and will gladly give further particulars on request. For further information write L. J. Garcey, General Agent, Railways of France, 281 Fifth Ave., New York.

EXAMINATIONS OF CANDIDATES for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C. .....July 9, 1923
At Chicago, Illinois .....July 9, 1923
At San Francisco, Cal. .....July 9, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

BOOKS RECEIVED

THE RIDDLE OF THE RHINE. Chemical Strategy in Peace and War. By Victor Lefebure, Officer of the Order of the British Empire, with a preface by Marshal Foch and an introduction by Field-Marshal Sir Henry Wilson, Bart., Chief of the Imperial General Staff. New York: E. P. Dutton & Company, 681 Fifth Avenue.

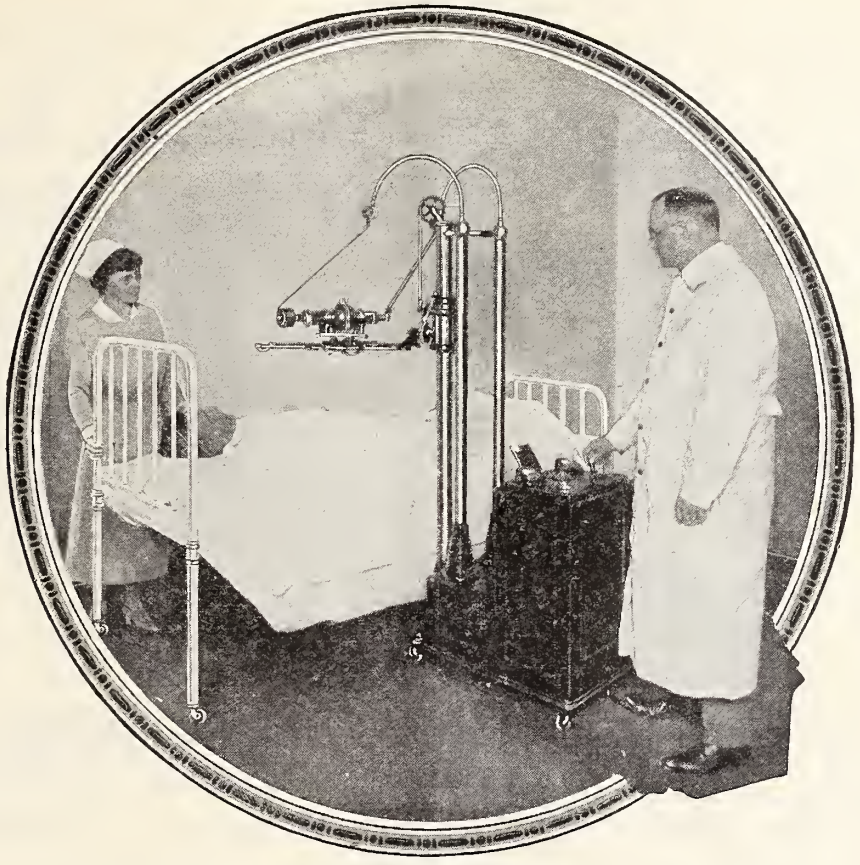
THE DEBT OF MEDICINE TO THE FINE ARTS, by J. A. Nixon, C.M.G., M.D., Cantab., F.R.C.P., from "The Bristol Medico-Chirurgical Journal, January, 1923. J. W. Arrowsmith, Ltd., 11 Quay Street, Bristol, England. Price 75c net.

THE PATIENT'S VIEWPOINT. By Paluel J. Flagg, M.D., author of "The Art of Anesthesia." The Bruce Publishing Company, Milwaukee, Wis. Price $1.30.

THE SURGICAL CLINICS OF NORTH AMERICA. February, 1923. Vol. 3, No. 1, Philadelphia Number. Published bi-monthly. W. B. Saunders Company, Philadelphia and London.

THE HEART IN MODERN PRACTICE—Diagnosis and Treatment. By William Duncan Reid, A.B., M.D., Chief of Heart Clinic at the Boston Dispensary, etc. Thirty-two illustrations. Philadelphia and London: J. B. Lippincott Company. Price $5.00.

(Concluded on page xiv.)



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VICTOR

BOOKS RECEIVED

(Concluded from page 574)

INFLAMMATION IN BONES AND JOINTS. By Leonard W. Ely, M.D., Associate Professor of Surgery, Stanford University. One hundred and forty-four illustrations. Philadelphia and London: J. B. Lippincott Company. Price $6.00.

DISEASES OF THE RECTUM, ANUS AND COLON. By Samuel Goodwin Gant, M.D., LL.D., Professor and Chief of the Department for Diseases of the Colon, Rectum and Anus, at the Broad Street Hospital, Graduate School of Medicine, New York City. Three octavo volumes, totalling 1,616 pages with 1,128 illustrations on 1,085 figures and 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $25.00 net.

BOOK REVIEW

ESSENTIALS OF SURGERY. Archibald L. McDonald, M.D., Lecturer in Surgery, St. Luke's Hospital, Duluth, Minn. Second Edition. Pp. 293. Illustrated. Cloth. Price $2.50. Philadelphia: J. B. Lippincott Co., 1923.

This little volume represents an elaboration of the lectures delivered by the author to the Nurses' Training School of the above-named hospital. It is an ingenious admixture of bacteriology, pathology, surgical diagnosis and surgical treatment, and is unique in that nursing technique is entirely omitted. The author is rather conservative in his statements, a most praiseworthy attitude to assume before an audience of nurses.

As an illustration of the care with which the text is written, he speaks at some length of the mental preparation of the patient for operation, and concludes, "The unvarying rule is that all inquiries are to be referred to the surgeon." His work is up-to-date, including references to the use of pituitrin for gas pains, though no mention is made in this connection of the sometimes more desirable effect of eserine. Practical hints abound, such as the sometimes neglected caution not to use mecurial solutions on top of iodin, and the equally important one as to the analgesic effect of carbolic dressings. Good advice is given the nurse who sometimes has to care for a case before the arrival of the surgeon, as illustrated by the caution not to give morphine or cathartics in suspected acute appendicitis. The text concludes with an admirable chapter on gynecological diseases, and an excellent glossary. For the purposes of review and examination, demonstrations are planned at the end of each chapter. This feature alone would commend the work to the average training school lecturer.

The only possible criticism of the work is that it may perhaps be a little too deep for the average student nurse to master, but this criticism would not be valid if the text were supplemented by charts, demonstrations and adequate lectures. In this connection it may be said that the work falls in line with the present trend in nursing education, i. e., the nurses are either undertrained or overtrained; undertrained for administrative work, and overtrained for practical work. This volume, when mastered by the nurse, gives her a most excellent understanding of surgical diseases, a subject of such great importance that she could scarcely be overtrained in it. W. E. B.

NEW AND NONOFFICIAL REMEDIES

MERCUROSAL.—Disodiumhydroxymercurisalicyloxyacetate. Mercurosal contains from 43.0 to 43.8 per cent of mercury in organic combination. It is claimed that mercurosal is relatively free from irritant action, that

(Concluded on page xvi.)

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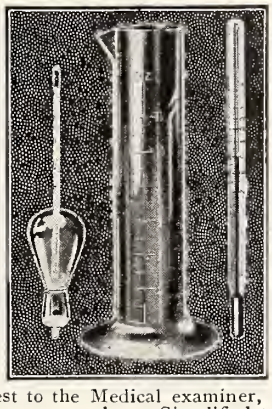
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(Concluded from page xiv.)

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(Concluded on page xviii.)

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(Continued from page xvi)

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ORIGINAL ARTICLES

THE OPERATIVE TREATMENT OF SUPPURATIVE MENINGITIS

A SECOND REPORT OF CLINICAL EXPERIENCES IN SUBARACHNOID IRRIGATION, AND OF POSTMORTEM OBSERVATIONS*†

WELLS P. EAGLETON, M.D.

NEWARK, N. J.

SUPPURATIVE MENINGITIS FROM ADJACENT INFECTION, OTITIC OR NASAL: Meningitis is an infection of the cerebrospinal fluid circulatory system; which system envelops and permeates all parts of the brain. The circulating fluid originates in the choroid plexus, passes through the ventricles, into the basal cisterna and then over the cortex, from which it is discharged into the large venous sinuses.

FUNCTIONS OF THE CEREBROSPINAL CIRCULATORY SYSTEM: The cerebrospinal fluid system is very important in the nutrition of the brain: into it are emptied the products of the brain's metabolism. Within it is contained the protective mechanism of the brain against infection. It is the chief agent whereby infection which has actually entered the system is removed.

Nourishment of the cerebral tissue is furnished primarily by the blood from the cerebral capillaries. Accompanying the intracerebral blood-vessels are prolongations from the cerebrospinal fluid system, so that it is in intimate relationship with the blood circulatory system, the blood of the capillaries being separated from the perivascular prolongations of the cerebrospinal fluid system by only a layer of epithelial cells.

The proof that the protective mechanism of the brain is contained within, and operates by means of the intimate normal relationship between the cerebrospinal fluid and the blood circulatory system, is furnished by the experimental fact that, although microörganisms can normally circulate freely in the blood stream without producing a meningitis, any severe disturbance either of the blood circulatory or of the cerebrospinal fluid system, in the presence of microörganisms free in the blood stream will cause a meningitis. Experimentally, with bacteria free in the blood stream, if the blood circulation be upset, either by pressure on the carotids or by the temporary cessation of the heart, this hemic circulatory disturbance in some way upsets the normal action of the protective mechanism and microörganisms from the blood stream will enter the cerebrospinal fluid circulatory system, a meningitis following.

On the other hand, in the presence of a bacterial blood stream infection, if a slight alteration of the cerebrospinal circulatory system is produced—such as occurs from the removal by lumbar puncture of a few drops of fluid—this disturbance of the normal relationship between the cerebrospinal fluid and blood circulatory systems by an otherwise harmless procedure, will allow the free microörganisms within the blood to enter the cerebrospinal fluid system, and produce a meningitis.

Clinically, then, a lumbar puncture in the presence of a blood stream infection may be a very dangerous procedure, as a meningitis will result if it is performed at the exact moment when bacteria are free in the blood stream. The reason why meningitis does not more frequently follow lumbar puncture in septic thrombophlebitis is probably because the microörganisms of the blood stream have already been acted upon by the protective mechanism of the blood itself at the time of the puncture.

This experimental fact has been established clinically. It has possibly occurred in three cases in my experience. One positive case with autopsy I have reported elsewhere.[1]

In a later case, the day following an operation for septic sinus thrombosis, as high temperature and great restlessness continued, a physician performed a lumbar puncture, which liberated clear sterile fluid under pres-

*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922, by invitation.

†First Report: "The Operative Treatment of Suppurative Meningitis; with Especial Reference to Irrigation of the Cranial and Spinal Subarachnoid Spaces; and the Importance of Protective Meningitis from a Prognostic and Therapeutic Standpoint. With an Analysis of the Cases of Recovery—Exclusive of Meningococcic—Reported in the Literature." President's Address; Transactions of the American Otological Society, 1921; also, Laryngoscope, page 1, January, 1922.

sure; a few days later the fluid obtained by lumbar puncture contained microörganisms.

In the third case, six days after a mastoid operation in the presence of high temperature, with a positive blood culture of streptococcus hemolyticus, a lumbar puncture revealed 100 cells without microörganisms. The removal of the clot from the sinus was followed by negative blood cultures, but without remission of the temperature. No meningeal symptoms developed until six days later, when a second lumbar puncture liberated a *sterile* cloudy fluid with 5,000 cells. At the autopsy the meningitis was found to be confined chiefly to the cerebral hemispheres near the median line, the basal cisterna being free.

In this case, location of the meningeal infiltration certainly would point to the meningitis having originated from a blood stream infection, as experimentally produced meningitis (of blood stream origin) first attacks the vertex, in contradistinction to meningitis of aural origin which primarily attacks the basal cisterna, to which area the infection is largely confined.

CONTROL OF INFECTON BY THE CEREBROSPINAL FLUID CIRCULATORY SYSTEM: The arachnoid cells lining the spaces are the chief agents in the removal of infection. When the cerebrospinal fluid system itself is invaded by bacteria, these cells enter its pathways, act as phagocytes encircling and lysing the microörganisms, carry them through the system, and deposit them in the blood stream.

The cerebrospinal fluid circulatory system also plays a large part in the repair of injuries to the brain itself. In gunshot wounds, in trauma resulting from the surgeon's knife, or in the destruction of cerebral tissue from suppuration in brain abscess, it is the cells of the piarachnoid that largely repair the damage.

SUMMARY: The cerebrospinal fluid system may be regarded as having the following functions; it is necessary for the proper performance of the brain metabolism; it is the chief factor in the protective mechanism of the brain against infection and for the control of infection; it is a factor in cerebral and meningeal repair.

THEORETICAL CONSIDERATIONS IN THE SURGERY OF MENINGITIS: Meningitis is an infection of this system; consequently the following clinical facts, based on its functions, should enter into all surgical considerations of meningitis:

First—Meningitis is an infection of a circulatory system which is necessary for the proper nutriment of the brain, for which reason the surgeon should aim if possible not to handicap further the system which is already impaired.

Second—In view of the profound cerebral reaction which frequently follows the withdrawal of a moderate amount of cerebrospinal fluid by lumbar puncture, it is logical to assume that if a large quantity is to be removed, it should be replaced immediately by a non-irritating fluid of similar composition. This is in order that the system may continue to function normally; for a similar, though much less obvious reason, that blood is transfused after severe hemorrhage.

Third—As the invaded system normally contains the chief provisions for the control of infection, nature's own protective mechanism has broken down. The surgeon's problem is how to restore it.

SURGICAL STAGES OF MENINGITIS:

(a) *Meningitis in the Primary Stage, a Limited Process, and Possibly Amenable to Treatment:* In the primary stage of suppurative meningitis, the result of the extension of a suppurative process from an adjacent focus (such as the ear), *the infection is limited to an area of the system.* This is an important pathological fact, which I did not appreciate in my previous report, viz., that it is only in the terminal stage that bacteria invade the whole system.

Postmortem observations lead me to believe that following this primary stage, and frequently for a considerable period subsequently (even after a few microörganisms are demonstrable in the fluid from the lumbar region) the infective process is chiefly confined to the basal cisterna.[2] This explains why the clinical symptoms of meningitis, even until late in the disease, are entirely of basilar origin—stiff neck, vomiting, ocular paralysis, etc. A study of the differences in the character of the exudate of the base and hemispheres makes me regard the latter, at least until the terminal stage (the exudate covering the hemisphere, which is the outstanding process at the time of the autopsy) as in reality largely an overflow process, chiefly reparative, in nature's effort to control the infection, the multiple patches being caused by the leucocytes as they endeavor to carry the bacteria through the system and deposit them in the blood stream.

In a recent case of fulminatory meningitis of aural origin from infection of pneumococcus mucosa, incision of the dura over the middle fossa was not followed by the escape of any fluid, showing that the piarachnoid spaces of this area were not distended. An occipito-atloid puncture liberated an enormous quantity of turbid infected fluid under excessive tension.

The postmortem demonstrated that, although the cortex had many small patches of exudate, the chief area involved was the basal cisterna, with multiple small hemorrhages into the piarachnoid.

(b) *Suppurative Meningitis in the Terminal Stages Almost Uniformly Fatal:* It has been established experimentally that the ventricles are

not affected in the early stages of the meningitis. When they are once infected, the adjacent brain tissue itself is invaded.[3] The case is then hopeless. But in the terminal stage, as soon, in fact, as the microörganisms have definitely invaded the whole cerebrospinal fluid circulatory system of the brain and cord (as shown by large numbers of microörganisms in the fluid obtained by lumbar puncture) any surgical procedure promises small hope of recovery. From a surgical standpoint, both this and the stage of ventricular invasion are terminal stages.

In the literature of suppurative (non-meningococcic) meningitis, less than forty cases have recovered in which bacteria were free in the fluid from lumbar puncture.[4]

When we consider the frequency of the disease, the numerous operations that are performed yearly for its relief, it must be admitted that if we are to attack the disease surgically, with a fair chance of success, either some new method must be devised, or there must be modification of the views which for long have been the basis of our operative procedures.

Surgical Treatment of Infection in General: In planning a surgical attack on meningitis it may be of advantage to consider how infection is controlled by the tissues in general, then to examine what difference exists between the meninges and those parts of the body that so uniformly recover from infection, and from this viewpoint try to determine whether the principles of treatment which are usually successful in other tissues are applicable to the meninges.

Drainage of Tissues of the Body in General, an Accepted Surgical Principle: Infection of most tissues of the body can be controlled by drainage. This is a fundamental surgical principle. Abscesses of the bone or soft part, or infections of the appendix or gall-bladder are uniformly treated by drainage, and the majority of the cases recover. In a similar way the surgeon successfully combats infection of the blood-vessels, such as lateral sinus thrombosis by local drainage; but cases of meningitis, in spite of all efforts at drainage, have almost uniformly died.

Drainage of a Whole Circulatory System Physiologically Unsound: It is impossible to drain a circulatory system completely; and I think that this is one of the reasons operative procedures have failed. We treated meningitis by attempted drainage of the circulatory system, which contains within itself the elements for the control of infection. It would be almost as logical to combat a blood stream infection, secondary to an infective thrombosis of the lateral sinus, by removal of all the blood.

Clinical experience and experimental evidence both testify that the placing of any form of drainage material into the subarachnoid space does not control infection; it simply irritates the already inflamed leptomeningeal membranes. It is true that a large amount of fluid is discharged, but the bulk of this fluid is not infected cerebrospinal fluid. It is an exudate produced by the tissues in nature's effort to expel the irritating drain. Furthermore, the longer the drainage is allowed to continue, the greater the risk of a secondary infection of the cerebrospinal fluid system; as demonstrated by the familiar experience that a cerebrospinal leak, following an intracranial operation, instead of preventing it, is frequently the direct cause of infection.

Blood Stream Bacteremia Controlled by a Special Process Not Available in the Cerebrospinal Fluid System: A blood stream infection, such as accompanies a thrombophlebitis, is controlled surgically by local drainage, viz., by the removal of the infected clot from the blood circulatory system. After its evacuation nature removes the remaining microörganisms from the blood stream by a special process. The bacteria cause minute clotting of the blood; these small clots are caught in the small vessels of the spleen, the kidneys, the lungs and liver, and, acting as irritants, are attacked and lysed by the phagocytes of the blood and tissues. An infected thrombophlebitis is an infection of a circulatory system, and its control is provided for by a mechanism that does not exist in the cerebrospinal circulatory system, that is, the clotting of the blood.[5]

Infection of the Tissues Themselves Largely Controlled by Phagocytosis: Infection of the soft parts in general is controlled chiefly by the action of phagocytes from the tissues and from the blood. The cerebrospinal circulatory system contains phagocytes, the cells of the arachnoid having definite phagocytic properties. When the cerebrospinal system is invaded by bacteria these cells remove the bacteria from the pathways of the system if the infection is not overpowering. If the infection is profound, the accompanying toxemia (the result of bacterial invasion) occasions a paralyzing influence on the phagocytic arachnoid cells.

Toxicity of Effusions: It is an experimental fact that while the blood of an infected animal is only slightly more toxic than the blood of a

normal animal, the fluid of an effusion (the result of a bacterial infection) is highly toxic (Teale).[6] This is true of all bacterial effusions, whether situated in the cavity of the peritoneum, the soft tissues, or in the subarachnoid spaces of the cerebrospinal circulatory system. The cerebrospinal fluid that occurs adjacent to an infection is no longer normal spinal fluid, it is largely a toxic effusion.

This I believe is the explanation of the recoveries that have followed the operative opening of the abdomen in tubercular peritonitis; the improvement being the result, not, as is generally supposed, from exposure of the inflamed peritoneum to the air, but is due to the escape of the toxic fluid from the peritoneal cavity.

SUMMARY OF FUNDAMENTAL DIFFERENCES BETWEEN THE CONTROL OF BACTERIAL INVASION OF THE CEREBROSPINAL FLUID AND OF THE BLOOD CIRCULATORY SYSTEM: (1) Clotting (the essential preliminary to the elimination of infection from the blood stream) is not available in the cerebrospinal fluid circulatory system; (2) the fluid which fills the subarachnoid spaces is no longer normal cerebrospinal fluid but is largely a toxic exudate; and (3) the mechanism which the cerebrospinal system has for the control of infection is itself attacked by the profound toxemia from this exudate.

PATHOLOGY OF SUPPURATIVE MENINGITIS: In the presence of an infection from an adjacent primary focus (such as the ear or nose) the protection reaction of the tissues, in their effort to prevent invasion of the meninges and the brain, occasions at first an internal pachymeningitis. For some reason, usually by way of a perivasculitis or a retrograde thrombophlebitis of a vein passing through the dura of the infected area,* this protection is broken through, and an infection of the cerebrospinal fluid system adjacent to the area of primary infection occurs. *The involvement of the cerebrospinal fluid system is shown by an increase in and alteration of the composition of the cerebrospinal fluid of the area invaded,* and clinically, by the fluid obtained from lumbar puncture being under tension—with perhaps a high cell-count—showing increase of the fluid from irritation. The chemical composition, as well as the appearance of the fluid adjacent to the area of primary infection, is different from the fluid of the lumbar puncture. The infected adjacent fluid is altered in its color, being yellowish, while normal fluid is colorless. In one of my cases, it was reddish, as if blood-stained. The fluid is coagulable, while normal cerebrospinal fluid is noncoagulable. This altered coagulable fluid is largely an exudate, and is highly toxic.†

Jenkins, in an early case of meningitis, has demonstrated microörganisms in the fluid adjacent to the infection, although the fluid from the lumbar puncture was sterile, and the cell count very low—48.[7]

In the initial stage of meningitis the increased amount of fluid obtained from the lumbar region is of more or less normal character; its cells are largely the result of a protective reaction.

This was demonstrated in a case of meningitis secondary to a sinus thrombosis of the basal veins, in which, at autopsy, the infection was limited to the subdural space, but the inflammatory protective exudate within the cerebrospinal fluid system was sterile. This sterile subarachnoid space exudate followed in a general way the sulci of the convolutions as they went towards the arachnoid granulations; showing that the excessive amount of fluid obtained from a lumbar puncture was simply the evidence of an *adjacent* localized infection, the latter being entirely outside of the cerebrospinal fluid circulatory system. The exudate, however, plugged the spaces of the subarachnoid and by occlusion of the small intra-arachnoid communications seriously interfered with the normal functions of this system, and caused additional toxemia.

In another case, the meninges at autopsy failed to exhibit microscopical evidence of meningitis, but the fluid from the lumbar region at an early stage contained a few pneumococci and occasioned a fatal peritonitis when injected into an animal.‡

Principles of Surgical Treatment: Pathologically, then, in the early stages of meningitis, the chief indications are: (1) The early removal of the infected cerebrospinal fluid adjacent to the area of primary infection (ear, nose or fractured skull) as well as the drainage of the infection in these structures. This well-known surgical procedure of itself will cure a considerable number of cases, especially if performed early. My results have improved since I have realized the importance of early operation.

(2) In addition I believe it to be advisable in the majority of cases to substitute for the toxic cerebrospinal fluid a non-irritating fluid by subarachnoid irrigation; thus removing a paralyzing influence and allowing the protective mechanism of the meninges to act more efficiently. Irrigation is surely indicated when there is reason to believe that the cerebrospinal fluid system as a whole, is infected.

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*I have demonstrated such a retrograde thrombophlebitis at autopsy in one of my cases.

†I have no laboratory evidence of the latter statement. The only case in which sterile fluid from the lumbar region of a case of suppurative meningitis limited to the cerebrocortex was injected into an animal, failed to exhibit any toxic influence on the animal. (Dr. Harrison S. Martland.)

‡"There were several lumbar punctures done. The first showed a clear fluid under pressure but negative in every other way. The second fluid about two days later was cloudy under pressure; three plus globulin; 133 cells, chiefly polymorphonuclears; Gram positive diplococci in capsules, having the morphology of the pneumococcus. A mouse was injected with the second fluid intraperitoneally and became very sick after about 18 hours. The mouse was killed at the end of 24 hours and autopsied. Autopsy showed no peritonitis but pneumococci were found in the heart's blood." Loewy, Otto, and Asher, Yaguda, Beth Israel Hospital, Newark, N. J.

Details of Operation for Suppurative Meningitis: (1) The primary focus of infection must first be thoroughly removed, after which is attacked the adjacent infected area of the cerebrospinal system at its most probable site of infection, in order to evacuate the localized infected fluid.

If the labyrinth is the source of infection, it must be opened and the infected effusion in the cisterna pontis allowed to escape by way of the internal auditory meatus (translabyrinthine drainage).[8] Neumann's labyrinth operation followed by an incision of the dura behind the petrous pyramid, does not allow a free evacuation of fluid because the herniation of the cerebellar substance into the opening immediately closes the dural opening. It has, however, given fairly satisfactory results in my hands and, theoretically, should be the operation of election whenever the posterior semicircular canals or the ductus endolymphaticus are the route of invasion, which cannot be diagnosed except at operation.

When the infection has entered the cerebrospinal fluid system by way of the middle fossa, the drainage of the infected area should be accomplished by a small incision in the dura through the area of invasion—the roof of the antrum or tegmen—care being taken to open into but not puncture through the arachnoid. The dural opening should be large enough to permit of the introduction of a small spatula for the evacuation of the fluid from the base of the middle fossa. If the dural opening be too large, it may occasion a local necrosis of the brain or piarachnoid, from drying or cerebral herniation.

The evacuation of infected fluid is not drainage in a true sense, no effort should be made to establish permanent drainage, as continuous drainage of the subarachnoid space is not only useless, but harmful. It is apt to cause injury to the as yet uninfected brain tissue. There is no case of recovery following it. (Haynes operation.[9])

The cases of recovery following the introduction of drainage tubes[10] and silver wire into the cisterna pontis through the internal auditory meatus after the destruction of the labyrinth have simply drained a localized area of the system.

(2) *Subarachnoid Irrigation; a Replacement Procedure:* The value of subarachnoid irrigation consists, in my opinion, in the removal of a highly toxic material from the pathways of the system and *its replacement by a non-irritating fluid* of the composition of normal cerebrospinal fluid *at the temperature of the body.* The original conception that it is possible to irrigate through an infected cerebrospinal circulatory system is fallacious. Clinical experience and experiments on the cadaver have convinced me that the small size of the openings between the subarachnoid spaces and their occlusion in suppurative meningitis by exudate, will prevent the irrigated fluid from running freely from the frontal region, through the meshes of the piarachnoid, to be discharged from the cerebellomedullary cisterna. But irrigation of the piarachnoid space of the frontal region will force out a quantity of fluid (which is more or less highly toxic), replacing it by a nonirritating solution; although in my experience the amount introduced is always much larger than that recovered.

CASES OF RECOVERY FROM SUPPURATIVE MENINGITIS FROM SUBARACHNOID IRRIGATION: I have only two cases to report of recovery from meningitis by subarachnoid irrigation in which the fluid obtained by lumbar puncture contained microörganisms, in addition to one without microörganisms. In both of the former the original focus of infection played no part whatsoever in the surgical treatment, as at the time of the operation the meningitis was uniformly distributed over the whole cerebrospinal fluid circulatory system. From these successful cases and from my experience with ten additional cases of subarachnoid irrigation and many postmortem examinations, I have come to my present opinions regarding the treatment of meningitis, which differ in important respects from those expressed in my previous report.

The history of the cases of recovery are briefly as follows:

Case 1.—From the Newark City Hospital. Compound fracture of skull; doing well but persistent headache and irregular temperature. On the 15th day became unconscious. Papilledema, Kernig. Lumbar puncture revealed a cloudy fluid containing diplococci. Interspinous injection of meningococcus serum; subarachnoid irrigation, from frontal to occipito-atloid and lumbar regions. Immediate recovery.[11]

Case 2.—Case of Dr. Wm. H. Cook, Newark Homeopathic Hospital. Appendicitis operation, followed 17 days later by high temperature intense pain in the back, thighs and legs, stiff neck, Kernig and headache. Lumbar puncture: cloudy fluid containing pneumococci. Subarachnoid irrigation. Immediate recovery.

These two cases are not of great importance. They add, however, two to the meager number of cases of recovery from general suppurative meningitis with microörganisms free in the cerebrospinal fluid system.

Case 3.—Case of Dr. Ambrose Dowd, Newark Eye and Ear Infirmary. Child. Double running ears for two weeks. Brought into hospital unconscious. Kernig, stiff neck; temperature 104 degrees. Thought to be dying. All conditions pointed to general suppurative meningitis. Lumbar puncture revealed fluid under great pressure; cell count 40, globulin greatly increased, Levinson's test for T. B. positive; no organisms found in either smear or culture. Operation: opening of infected mastoids (filled with granulation tissue); incision of dura adjacent to infection, with evacuation of large amount of fluid, followed by subarachnoid irrigation. Immediate recovery, temperature falling to normal within a few hours after the operative procedure.

Comment.—It may be justly claimed that this child had simply a meningismus; that it was the removal of the primary focus of infection of the ears that was the beneficial agent.

I would answer that I have seen many cases of meningismus. I have had several recover as the result of the eradication of the primary focus and the incision of the dura,[12] but I have never witnessed the im-

mediate relief from all cerebral and toxic symptoms that occurred in this case. This surprising improvement has uniformly followed the subarachnoid irrigation with a single exception.

All of the cases, except those reported above, have later died; but all immediately following the first irrigation have shown a great improvement; the temperature has fallen within a few hours to, or near normal, and the patients have felt and looked well. Something favorable has happened which does not occur in other forms of treatment. This I have attempted to explain in the present communication. This favorable influence certainly should be utilized in an operative attack upon meningitis. The question to be decided is when, and in what class of cases, it should be employed.

Explanation of Improvement from Subarachnoid Irrigation

In carefully reviewing my cases I have come to the conclusion that the evidence warrants the assumption that the startling relief after subarachnoid irrigation is due, not to the removal of the bacterial invasion, but to the irrigation removing deleterious products from the cerebrospinal fluid system. The cloudy fluid filling the spaces, because of its effusive character, causes a profound toxemia, the microörganisms found in the fluid from the lumbar region representing, not a general invasion of the whole system, but an overflow of a local infection.

This view is substantiated by clinical evidence as 25% of all general pneumococcic invasions are microscopically found to be associated with a protective meningeal reaction,[13] and it is well known how profound a toxemia is frequently present (especially in pneumococcic meningitis of aural infection) for many days before microörganisms can be demonstrated in considerable numbers in the lumbar fluid.

When to Irrigate: Postmortem observations demonstrating the extent and occluding character of the meningeal exudates, have convinced me that, in the terminal stage, subarachnoid irrigation is mechanically impossible. Certainly bacteria cannot be completely eliminated by any form of surgical treatment. On the other hand, clinical experience and postmortem findings lead me to believe that many of the cases of suppurative meningitis actually die from the profound toxemia incident to the absorption from the cerebrospinal fluid system of the deleterious products of bacterial invasion, before the bacteria themselves have completely invaded the system.

This is not infrequently the case, especially in pneumococcic infection, concurrent with or secondary to middle ear suppuration. In one case at postmortem the brain gave slight microscopic evidence of meningitis, although pneumococci had been present in moderate numbers in a clear fluid not under pressure from the lumbar region. The autopsy also revealed a purulent exudate in both middle ears and in almost all the accessory sinuses of the nose, as well as a pneumococcic infiltration of the lungs.

The child *from the very first* was apparently suffering from a cerebral toxemia, as shown by stupor, restlessness, localized paralysis of one arm, lateral deviation of the eyes, and nystagmus. The pneumonia and sinus exudates were, in my opinion, the result of blood stream infection, although the cerebrospinal fluid system had succeeded in keeping its pathway free from general invasion, in spite of the profound cerebral toxemia.

Until recently, it has been my practice not to irrigate until the existence of a general suppurative meningitis was demonstrated by microörganisms in the lumbar fluid. It is possibly because of this delay that so few of the cases have recovered. I believe that, to be successful, subarachnoid irrigation must be performed during the stage of toxemia, prior to the complete invasion of the cerebrospinal circulatory system by bacteria, although bacteria may be present in small numbers in the fluid obtained from the lumbar region.

Dangers: So susceptible is the brain to foreign substances that, if any fluid is to be *passed through* the subarachnoid spaces without causing profound toxemia with circulatory disturbance and respiratory embarrassment, its chemical composition must closely resemble the normal cerebrospinal fluid, in addition to which it must contain a small amount of calcium, and must be at the temperature of the body.[14] Even distilled water is highly toxic.

In one of my cases, after a subarachnoid irrigation, 10 c.c. of meningococcic serum *at the temperature of the room* was passed by gravity into the basal cisterna, and downward toward the lumbar region, a lumbar puncture needle being present in the lower part of the spine. This was immediately followed by an alarming collapse. The respiration became shallow, the pulse rapid, irregular, and at times imperceptible. For hours it was thought the child would die, although but a few minutes previous over 100 c.c. of a warm modified Ringer's solution had been passed through the cerebral and spinal subarachnoid spaces without appreciable shock, and a similar meningococcic serum had been *injected into* the spinal canal on two previous occasions without depression.

Deductions from Personal Experience with Subarachnoid Irrigation. First: A temporary startling improvement has uniformly followed subarachnoid irrigation in all of the thirteen cases, with one exception, of suppurative meningitis containing microörganisms in the fluid obtained by lumbar puncture. Two such cases, have recovered and one without microögranisms in the fluid of the lumbar region. None are above the suspicion of having belonged to the type which might have recovered without surgical intervention.

Second: The second irrigation is not followed by this improvement.

Third: Subarachnoid irrigation is safe when

properly performed. It does not occasion any greater shock than other protracted operations—not as much as the usual intradural operation consuming the same amount of time.

Fourth: It is a highly technical procedure. Any slight deviation in technic during a subarachnoid irrigation may be immediately fatal.

Fifth: Autopsies performed after subarachnoid irrigation have demonstrated that, with proper technic, there should be little or no hemorrhage; also that the area of the inlet canula is free from adhesions; both of which would warrant the assumption that irrigation itself, if properly conducted, does not cause meningeal irritation at the site of outflow or inflow.

If, however, great care is not taken in the introduction of the inlet canula, a pial vessel may be injured, or the inflowing fluid may cause a distension of the subdural space, and occasion an extensive thin flat layer of hemorrhage into the subarachnoid or subdural spaces. Both have happened to me. In one case, at the time of the irrigation no blood appeared in either the occipito-atloid or lumbar puncture needles, but at autopsy there existed extensive flat hemorrhage in both the subdural and subarachnoid spaces, limited to the irrigated side, with its greatest thickness parallel to the superior longitudinal sinus. This followed rupture of one of the veins entering the superior longitudinal sinus from distension of the subdural space. I cannot believe that the accident contributed in any way to the patient's death, the hemorrhage having been too thin to have exerted a severely depressing influence. It is noteworthy that this case, with complicating subdural and subarachnoid hemorrhage, was the only one that failed to show a startling improvement after irrigation.

Sixth: Subarachnoid irrigation must have a stimulating if not an irritating effect on the cerebrospinal fluid system, because, in one instance, the fluid obtained by lumbar puncture prior to the irrigation, contained 300 cells with micro-örganisms, while that obtained the day following the irrigation had 3,000 cells, thus confirming the experimental observations of Wegeforth and Essick.[15]

TECHNIC OF SUBARACHNOID IRRIGATION

Preparation: As irrigation necessitates operating in both a clean and a contaminated field, the following procedure is suggested, for which a team of trained workers is necessary:

(1) Operator.

(2) First assistant to perform lumbar puncture, to pass and hold the inflow canula and to control its flow.

(3) Second assistant to regulate temperature and amount of inflowing fluid. Neither assistant should touch the infected areas of the mastoid or of the brain.

(4) Nurse to pass instruments and hold retractors.

The patient should be wrapped like a papoose in a canvas bag or two sheets, going from neck to feet, one sheet from the lower part of neck to lumbar region, the other from lumbar region to feet, in order that the patient can be easily rotated from side to side without disarranging the towelling.

Draping: The operator outlines on the skin at least two holes in the frontal region. If the left side is to be used, care should be taken to keep well away from the speech center. He likewise defines the line of median raphé in the neck and makes a cross cut where the needle for the occipito-atloid puncture is to enter. If no previous mastoid operation has been performed, the operator should now outline the incision to expose the infected area of the temporal bone.

He then covers the patient's whole head with a wet piece of gauze followed by proper towelling, which should admit of exposure of the face, the mapped-out holes in the frontal, occipito-atloid and temporal regions.

Operative Procedure: As it is planned to perform all aseptic work first, the operator should (1) drill holes in the frontal region; (2) pass the occipito-atloid needle, but on reaching the fluid, should immediately stop the flow by the replacement of the stilette.

(3) He then orders the passage of the lumbar puncture needle by the first assistant. When the fluid is reached this stilette is also immediately replaced. The first assistant should then go to the patient's head and prepare to introduce the inlet canula in the frontal region.

All the work in a clean field having been performed, the operator may now (4) perform the mastoid or labyrinth operation and (5) liberate the infected fluid. If, on puncturing the dura, the brain protrudes, as it is apt to do when the subarachnoid spaces of the cortex instead of the cisterna are opened, the stilette from the occipito-atloid needle should be removed, and enough fluid evacuated to permit incision of the dura and the passage of a small flat spatula in the subdural space adjacent to the infected area.

The first assistant now (6) inserts the inlet canula and (7) commences the irrigation; during which the operator watches the opening in the temporal region and at the same time counts aloud the rate of outflow from the occipito-atloid needle, as "stream-1-2-3" (drops) the nurse doing the same for the lumbar region.

Toward the end of the irrigation, the patient is rotated in order that the infected area in the temporal region will become the lowest part of the body. During this turning the occipito-atloid needle should pass upward and the face downward.

Theoretical Physiological and Pathological Indications as to Method of Subarachnoid Irrigation: To meet the pathological indication that in the early stages the infection is limited to the basal cisterna, if incision of the dura over the middle fossa fails to obtain fluid, the surgeon should proceed to enter the basal cisterna (either in the posterior fossa by way of the labyrinth, along the posterior surface of the petrous) or else to open the cisterna at the base of the middle fossa anteriorly to the ear by the gasserian ganglion (Cushing-Lexner) route of approach, puncturing the dura just externally to the ganglion. To meet the physiological indication that irrigation be in the direction of the physiological flow, subarachnoid irrigation should theoretically proceed from a canula introduced in the occipito-atloid region forward through the basal cisterna, the outflow being provided for by an incision in the dura of the middle fossa below the temporal lobe, just external to the cavernous sinus and the gasserian ganglion.

As yet I have not had the courage to perform this procedure, which should be undertaken after animal experimentation, conducted to demonstrate that such a procedure is without danger to the respiratory and circulatory centers.

CLINICAL AND TECHNICAL OBSERVATIONS DURING SUBARACHNOID IRRIGATION

(1) There is clinical evidence from subarachnoid irrigations that during this initial stage of meningitis the process is limited. *Proof:* In two cases of meningitis it was not possible to irrigate from the infected area above the ear into the occipito-atloid region; showing that the primary area infected was walled off from the general cerebrospinal fluid circulatory system.

(2) The large amount of fluid which can be passed experimentally through the subarachnoid spaces of normal animals (from a few hundred to over 1,000 c.c. in one hour, or from 50 to 500 c.c. in 30 minutes in meningitis of from 2 to 4 hours' duration, as observed by Weed and Wegeforth)[15] is not possible in the human subject suffering from meningitis.

On the other hand, on the cadaver it is possible to irrigate fluid rather freely from a hole drilled almost anywhere in the skull out through the atloido-occipital region. Clinically, in cases of meningitis that involve the tempero-sphenoidal region, it is possible to irrigate from the frontal region and out through the basal cisterna needle. The discharge from the cisterna cerebellomedullaris occurs in rapid drops, about 60 per minute; but it is impossible to wash from the infected region into the basal cisterna, probably because the infected area is closed off by an exudate which completely occludes it.[16]

(3) In a case of meningitis, an occipito-atloid puncture made before the dura over the infected area was incised caused the whole dura to become flaccid; consequently, as the aim is to liberate as much of the infected fluid as possible, it is advisable to nick the dura over the infected area in the tempero-sphenoidal or cerebellar regions, before evacuating the fluid from the basal cisterna for irrigation. As soon as the brain fills the small opening, however, the fluid for the cerebello-medullary cisterna should be evacuated to allow of the enlargement of the dural opening and the passage of a flat spatula without injury to the cerebral cortex. I have not found it possible to enter the basal cisterna from an incision of the dura, over the tegmen.

(4) In one case of meningitis a lumbar puncture liberated no fluid, but an occipito-atloid puncture freed a large quantity. On starting subarachnoid irrigations from the frontal region, fluid flowed from the lumbar puncture needle, showing that "dry tap" is possible, even with an increase of cerebrospinal fluid in the cranium.

(5) In a case in which a second subarachnoid irrigation was performed, very little fluid escaped from the occipito-atloid puncture, but the introduction of a puncture needle liberated a moderate amount of the fluid, demonstrating that an exudation may fill and obliterate the basal cisterna without involving the subarachnoid spaces of the spinal cord.

(6) During a second subarachnoid irrigation, a free outflow occurred from the lumbar needle, accompanied by but a few drops from the basal cisterna. This at first occasioned some doubt as to whether the occipito-atloid needle had really entered the cisterna cerebellomedullaris. However the injection into the occipito-atloid needle of 10 c.c. of meningococcic serum by gravity was immediately followed by an increase of the flow from the needle in the lumbar region; showing that there may occur an occlusion by an exudate between the vertex and the base, without affecting the pathways from either the cortex to the lumbar area, or the basal to the lumbar region.

(7) There is a degree of pressure at which the fluid will flow freely from the outlet needle in the occipito-atloid region unless it be obstructed by the exudate. This point, in my experience, is generally about two and one-half feet above the patient. This degree of elevation should never be used, as anatomical considerations and autopsy findings have demonstrated that in the human subject any elevation of the inflow reservoir above one and one-half feet may cause a distention of the subdural and subarachnoid spaces with accompanying hemorrhage from the veins traversing them.

Anatomically, the communications between the meshes of the subarachnoid trabeculæ are so small that any effort to cause a continuous stream from the outlet needle in the cerebello-medullary cisterna must result in trauma to the subarachnoid spaces or distension ot the subdural space. Consequently it is better to drill several intact holes than to try to irrigate freely from one.

Clinical Observations Regarding the Cerebrospinal Fluid During Subarachnoid Irrigation: In one case, the day following the irrigation, the first tube of fluid drawn from the lumbar region contained 4,000 cells, the second tube 2,000 cells. It would appear, then, as if the cells had a tendency to fall to the bottom of the cord, where they may form a thick exudate, in chronic meningitis, much in the same way that purulent exudate frequently settles by gravity in the posterior horns of the lateral ventricles and at autopsy gives the appearance of localized abscess in one or both posterior horns, depending upon the continued position of the patient on his back or side.

In a case of meningitis, the primary lumbar puncture showed only 300 cells with microörganisms. At the time of the second irrigation, several days later, the fluid obtained from the occipito-atloid puncture was sterile. As serum had been injected into the spinal cord, this would appear to throw suspicion on the efficacy of a foreign serum in controlling bacterial infection. The subarachnoid irrigation had apparently removed the microörganisms from the basal cisterna, although this may have been more apparent than real.

CONCLUSIONS

(1) From a surgical standpoint acute suppurative meningitis of otitic origin should be divided into (a) an initial primary stage, in which the infection is limited to the subarachnoid space in the neighborhood of the primary focus of infection. Operative treatment in this stage offers some prospect of recovery, during which stage, and frequently for a considerable period, this inflammatory process involves chiefly the basal cisterna. And into (b) a terminal stage, in which bacteria have invaded the whole cerebrospinal fluid system. Any surgical treatment is now almost uniformly ineffectual.

(2) Suppurative meningitis is not necessarily associated with a high cell count and with microörganisms in the fluid form from the lumbar region. Jenkins has demonstrated that microörganisms in the cranial subarachnoid spaces may be associated with a clear sterile fluid with a cell count of but 48 from the lumbar region, and I have obtained sterile fluid from the basal cisterna, while the fluid from the lumbar region contained microörganisms. Consequently, we should not wait for the presence of microörganisms or a high cell count in the cerebrospinal fluid before making a diagnosis of meningitis.

(3) In suppurative meningitis any attempt at continuous drainage of the cerebrospinal fluid circulatory system is physiologically illogical and mechanically impossible.

(4) The term subarachnoid irrigation in meningitis is a misnomer What is accomplished by the subarachnoid irrigation is not the washing away of infection from the cerebrospinal fluid system, but the removal of an altered toxic cerebrospinal fluid from the parts of the system which are not directly infected, and its replacement by a fluid of the same temperature and a similar consistency as the normal cerebrospinal fluid, the altered and toxic fluid being forced out by pressure from behind. (This is a purely theoretical statement. I have no experimental proof of the same.)

(5) Subarachnoid irrigation to be effectual must be instituted at an early stage in meningitis. It promises most in those cases in which there is reason to believe that the patient is suffering principally from cerebral toxemia.

(6) Subarachnoid irrigation is still in the experimental stage. I believe that modifications in the technic to enable the basal cisterna to be irrigated are pathologically indicated.

(7) Subarachnoid irrigation is a highly technichal procedure, requiring at least four specially trained operators; consequently, all cases of suppurative meningitis should be delegated to a special surgical service, as should all intradural operations. Only by frequent team work can the proper procedure be promptly, efficiently and safely performed.

In this paper I wish to make public acknowledgment of the valuable assistance in the performance of postmortems and tissue and fluid examinations to Drs. Fred Sutton, Harrison S. Marland, A. R. Casilli, Asher Yaguda, and Miss Marjory Patterson; to my associate, Dr. John Bissett, for perfecting an apparatus to keep the irrigating fluid at an even temperature, and to my associate, Dr. Brayton Failing.

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DISCUSSION

DR. JAMES A. BABBITT, (PHILADELPHIA, PA.)

It is not fair to open a discussion with an apology. I feel it is a very great honor to be associated in the discussion of one of the pioneers in the work, who has just presented his paper. I am frank to admit that I came here to discuss one paper and am discussing another, because I was unable to get any information which would be of help to me in preparing this discussion.

Fifteen or twenty years ago we felt that many of us had reached the solution of a very profound alteration in the nasopharyngeal duct by the proposed sudden avulsion of the maxillary duct, changing in one fell swoop the high dental arch. Perhaps 10 years ago the work by Cushing, Frazier and others made us feel that the great problem of relief from cerebrospinal fluid tension had also been solved. Here we are to-day in a confusing array of new facts which would require an hour's contemplation even to permit discussion. Several things, however, seem pertinent. First, we are dealing with a disturbed balance. We are dealing with a complication in the relations of the blood stream to the sinus infection. It seems to me that it is not the problem of the special anatomy of the ear and the ear surroundings; it is not a problem of the general anatomy or of the little canals which run into the arachnoid area; it is altogether a problem of the blood stream infection and the immunity produced by it. It is not only a problem of carbohydrates and the liberation of the toxic products or of histologic changes producing sudden metabolic results which cause fatality, but also is a problem involving all the structures in combination and an analysis of the circulation. We have only part way reached the goal in each of these cases. Bacteriology itself is only a science of 40 or 50 years. This problem seems to be one which requires very intensive advance in pathology and bacteriology and I should just like to ask whether the situation in regard to anaphylaxis and whether the immunity situation in the blood are not undeveloped important problems in this matter. We all feel that many of the fatalities we have had could have been avoided. We are on the threshold of obtaining the means to do this. It seems to me that our speaker has presented a distinct advance, mostly because of his kaleidoscopic changes from year to year, and he gives us greater courage to continue in our efforts for the relief of this disease. We have to-day and in the past year learned the importance of early and quick interference, in spite of symptoms of very vague character. We have proceeded beyond the conclusive decision as to cisternal drainage and believe that within the next decade we will have the mortality in meningitis very largely reduced and this will be in a great measure due to the results of the investigation presented to us to-day.

DR. GEO. W. MACKENZIE (Philadelphia, Pa.): Dr. Eagleton is to be complimented on the quality of his paper. His remarks are original and though he may change his opinion now and then (an evidence of a healthy mind), at least he may be expected to give us something new. In one point he raised to-day, I take him to mean, that in combined drainage with lavage, he goes from the inside route outward rather than from the outside inward. I believe that is original with him and it looks like a logical plan of procedure in these desperate cases.

In his series of cases, I do not recall his having included the two cases which I reported ten or twelve years ago of cured suppurative meningitis. I should like to refer to them and tell why the results were favorable. One was a colored man who had been hit on the back of the head with a shovel by a fellow worker, with resulting temporal bone fracture. A week or two later, he developed mastoid empyema and meningitis, for which I was called in to see the case. This patient also had a facial paralysis, the infection evidently having gone through a tear in the dura. On removing the fragments of bone I noticed that there was a considerable cloudy cerebrospinal fluid. The leptomeningeal spaces drained for many days, requiring redressing twice a day. The patient made very marked improvement and within two days he had returned to consciousness, and the paralysis on the opposite had cleared up very materially. This patient recovered after several weeks from every symptom, including the paralysis of the extra-ocular process.

The second case was that of a woman who had a chronic middle ear abscess with complicating labyrinthine suppuration. The patient did very well for a short time and then developed erysipelas, followed by cerebral symptoms which progressed to a typical form of meningitis. No further operation was attempted. I did not attempt further drainage. The modiolus had been exposed at the time of the operation, and the tiny spaces about it had been shut off by exudate. Janson condemned this procedure years ago, in operating on the labyrinth, for fear of resulting meningitis. This theory, however, has been disproved since. When the opening was made in the case I mention, the drainage immediately was most favorable.

There is another point I wish to make, and that is that the toxemia has less to do with the fatal termination than increased intracranial pressure. For instance, in cases of tuberculous meningitis, we find that there are not enough of the bacterial toxins present to play any serious part.

About nystagmus, it should be recalled that in meningitis the direction frequently changes as often as three or four times in a single day.

DR. JOHN F. CULP (Harrisburg, Pa.): I have a great deal of respect for anyone who knows about the pathologic changes going on inside the skull. I should like to cite a very unfortunate case which occurred last month in my practice, and should like Dr. Eagleton to explain to me how this man could go around for days with this very serious disease and finally collapse and die. The patient was a veteran of the late war and was sent to me for treatment for earache. He had moderate congestion of the right membrane and slight congestion of the other, due to a severe cold. I gave him treatment and told him to come back the next day. Five days later I was telephoned that this man was in his home, fifty miles away, and wanted medicine to relieve his earache, which had gotten worse in the meantime. Examination the next day showed an abscess of the middle ear and some tenderness over the mastoid area. There was no swelling over the bone; temperature 99 2/5. The drum membrane was incised under local anesthesia, and he was asked to stay in the hospital, but refused. This was on Saturday. He came to see me the next Monday, but as there were a number of people in the office, he said he could not wait to see me, and that anyway he had no pain. I told him to come to see me not more than two days later. I did not see him until five or six days later, and then only three hours before he died. During the interval he had had severe headache, but he had no other symptoms and so had not reported. He had had a convulsion and been taken to the hospital on the medical service, where I saw him a few hours before he died.

Postmortem revealed the mastoid process full of pus. Thrombosis of the lateral sinus was present, extending down into the internal jugular vein, with suppurative meningitis at the base of the brain. He had been going about for days without any marked symptoms. I am satisfied that had he entered the hospital, we could have investigated and found some symptoms

which would have given some clue to his condition, and an opportunity to operate.

Dr. Eagleton (in closing): Dr. Babbit spoke of anaphylaxis; a great deal has been done about this. In a previous communication (Eagleton: "Operative Treatment of Suppurative Meningitis," Laryngoscope, January, 1922) I called attention to the case of a medical officer with the following history: Eighteen months before entering the service he had had a mastoid associated with an extradural abscess, following by local meningitis. The ear healed and he did well for 18 months. He then entered medical service and while there was given typhoid vaccine and had a profound reaction. While still suffering, he caught a cold and had a running ear from the same side on which he had had the mastoid 18 months before. On examination I told him to return home, and I was called to Morristown to see him the next day. He had a pneumococcic meningitis, from which he promptly died. There is no doubt in my mind that the vaccine caused a recrudescence of the former meningitis, by bringing into activity microörganisms latent in the meninges, which on account of the vaccine caused a general meningitis.

I have seen a large number of cases of recurrence of local inflammations such as uveitis and orchitis follow typhoid injections. The same thing can be caused experimentally, and so we can say that a man who has had meningitis and is injected with any other serum, if he has other complications such as a running ear, is apt to die. I have reported three cases, showing that we must look at them not only from a bacteriologic viewpoint but also from the profound chemical change which occurs.

Dr. Mackenzie pointed out exactly what I think is the proper treatment. He did not get drainage in his case. He stopped off the tube and let out the infected fluid which surrounded it. It is a matter of the removal of highly toxic fluid which is infected, and then afterward washing away the fluid so that the cells can function. I have seen cases of infection into the subdural space.

You can have great infection and nothing but headache to show for it. Unless it is relieved and the fluid evacuated; ultimately the patients get meningitis and die. Many cases walk around with infection of the cerebrospinal fluid, with few symptoms, and then die suddenly.

THE LONGEVITY OF PLATES AND OTHER FOREIGN BODIES IN THE TREATMENT OF FRACTURES OF LONG BONES*

MOSES BEHREND, M.D.
PHILADELPHIA, PA.

Several years ago, when the wave of enthusiasm for autogenous bone grafts swept the profession, metal plates and nails or other foreign materials were looked upon with disdain and the general opinion was that we had at last developed a technic that would finally displace all metal appliances. It was soon realized, howvere, that the time consumed to acquire and apply this special technic sacrificed many patients. All surgeons were not cabinet makers in applying their principles to the human frame. Gradually the technic was acquired. There

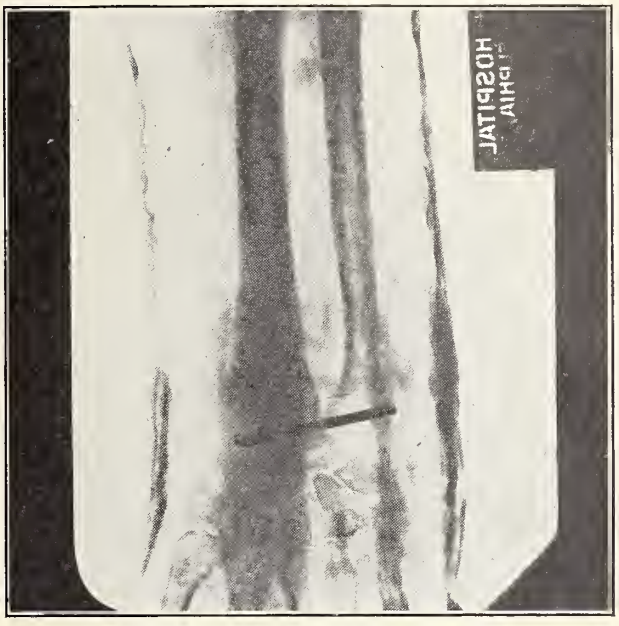


Fig. 1.—An ordinary wire nail in place six years. A case of habitual dislocation of the ulna.

began to filter through, however, many unsuccessful cases treated by means of the bone graft. It then became evident that not every case of fracture in poor primary position was suitable for an autogenous bone graft. The pendulum



Fig. 2.—Right femur. (See Fig. 3, left femur). Simultaneous fracture. Sherman plate in position nearly five years. Patient walks perfectly.

again began to swing towards the use of the metal plate for the fixation of bones.

It is not my purpose to belittle or even discourage the use of autogenous bone grafts, be-

*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

cause there exists a tremendous field of usefulness for this kind of surgery. A definite plan must be outlined in the treatment of fractures. If such a plan is fully visualized it will be a

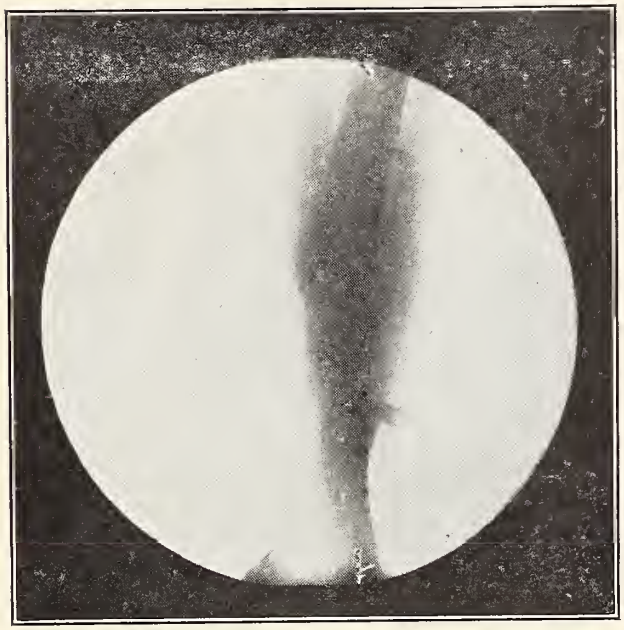


Fig. 3. (See Fig. 2, right femur). Lambotte plate in left femur nearly five years.

very simple matter to decide the kind of fixation or the kind of material necessary for the retention of the fragments in position.

When a metallic substance is used to retain the bony fragments the natural question arises:

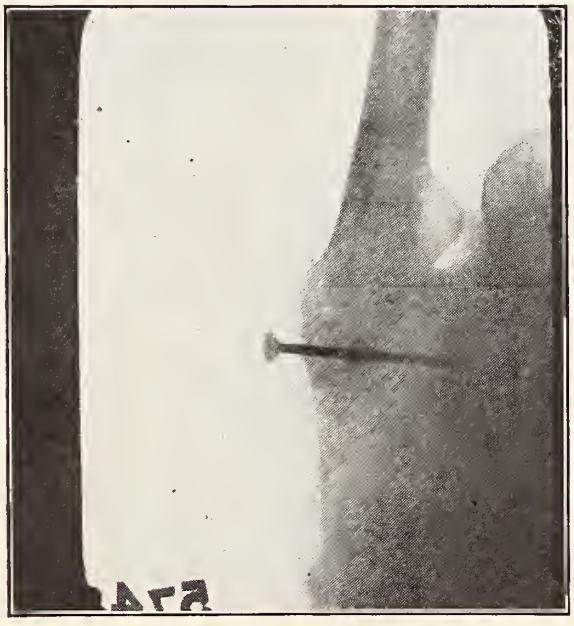


Fig. 4.—Case of a woman aged 70. A long wire nail was used in an united fracture of the head of the femur. Patient died two years after operation.

How long will we be able to leave the foreign body in position? This varies to a great degree with the kind of fracture we encounter, whether simple or compound, or whether infection has resulted following operation. In all simple fractures, where it is possible to keep perfect alignment with the aid of a metal plate, it is not necessary to remove it unless irritation of the part follows. If infection supervenes, the metal substance must invariably be removed.

There is no question that metallic substances may remain in situ indefinitely without causing the slightest inconvenience. A few illustrative cases will suffice to demonstrate the tolerance of tissues towards the materials made of metal.

Permit me to digress, in the presentation of the first case which was reported before this section of the society in 1916. The case was one of habitual dislocation of the ulna. He was operated on for this condition by means of a wire nail which is still in position and causes no irritation. Until a few weeks ago the



Fig. 5.—A small plate at lower end of the humerus still in position three years after operation.

patient's occupation was that of chauffeur. (Fig. 1.)

A case of decided interest is that of a man now fifty-three years of age, who four and a half years ago was struck by an automobile, fracturing both femurs. Inability to keep the fragments in position necessitated an open operation on both bones simultaneously. A Sherman plate was used on the right femur, a Lambotte on the left. The plates are still in position, the patient being able to walk perfectly. (Figs. 2 and 3.)

Nails are sometimes useful in ununited fractures of the head of the femur. They are especially indicated in old people who cannot stand the prolonged operation necessitated by the use of an autogenous bone peg. Figure 4 shows an ordinary wire nail used to assist in the repair

of an old ununited fracture of the head of the femur. The operation, performed under nitrous oxid gas, lasted only a few minutes. The patient was able to use the leg a few weeks after the operation, which was performed in February, 1918.

In children it is not always necessary or advisable to use metal substances, though many cases present themselves where one is unable to

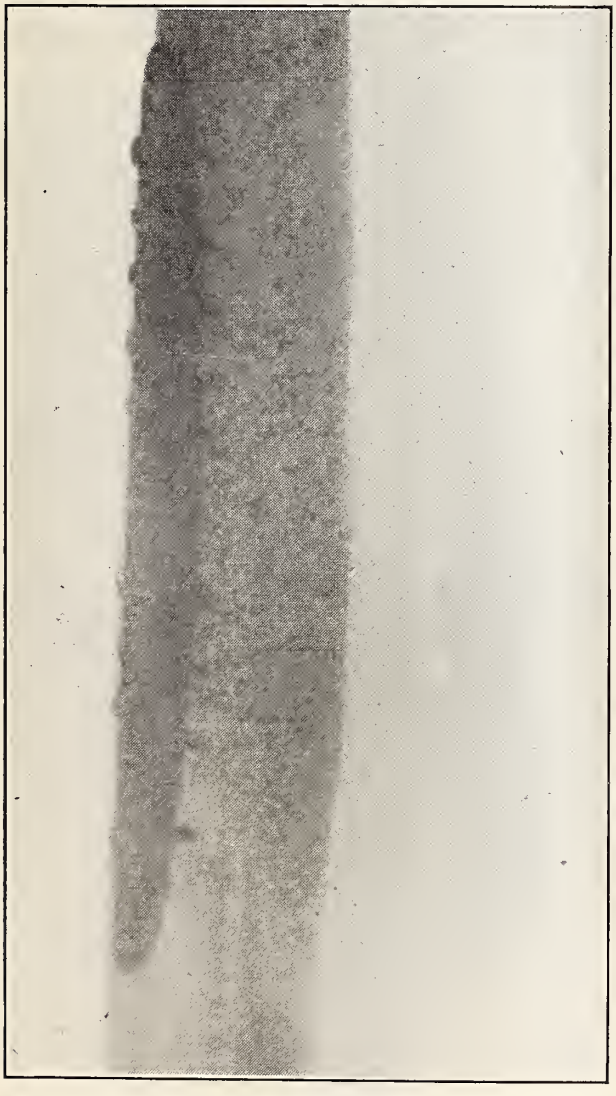


Fig. 6.—Illustration of a Lambotte plate in position seven years. Perfect use of leg.

procure the proper alignment. Figure 5 illustrates a case of fracture of the lower end of the humerus. Here it was necessary to use a small Lane plate to keep the ends in position. Lane points out that when a plate is necessary in growing bone, these plates should be removed as soon as union is complete. The plate in Figure 5 has been in position for nearly three years with perfect function; also there has been normal growth as compared with the other arm.

The Lambotte plate is a popular one for use in fractures of the humerus and femur, because it fits well the convexity of these bones. Figure 6 shows a plate of this character still in good position after seven years. The patient was

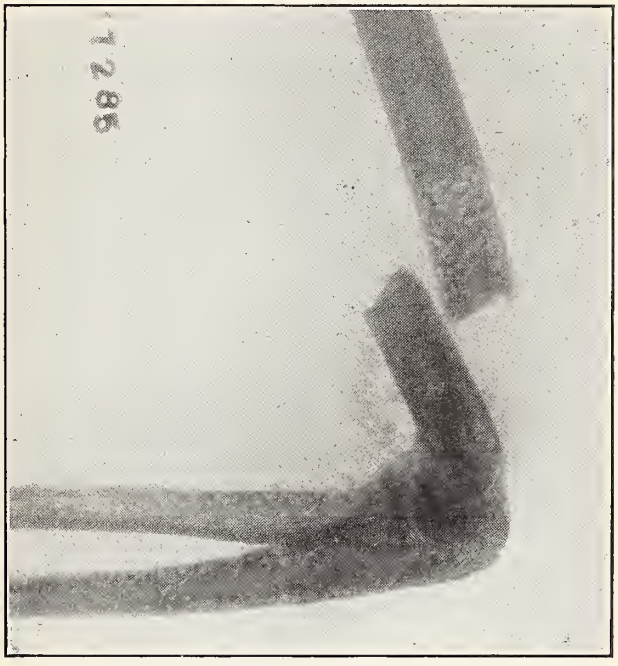


Fig. 7.—An impossible fracture to reduce by closed methods on account of the interposition of muscles revealed at the time of operation.



Fig. 8.—Reduction acomplished and maintained by means of a plate. In position seven months. Patient returned to occupation of automobile mechanic.

fourteen years old when operated upon. He is a chauffeur, attending to the necessary duties of his calling.

The necessity for using metal appliances for fractures of the upper extremity does not arise as frequently as for those of the lower extremity. However, when we cannot get the proper position essential for good function, the surgeon should not hesitate to perform an open operation and use some method of fixation. The



Fig. 9.—Silver wire retained three years after operation. Case of a child who goes to school every day. A fine functional result.

x-ray plate (Fig. 7) shows the position before operation. The open operation revealed the impossibility of reduction by closed methods. A plate was used and a perfect result was obtained. (Fig. 8.)

Figure 9 illustrates the use of silver wire occasionally employed in children. About three years ago two children were brought to the hospital with fractures of the femur which could not be held in proper alignment. Silver wire was used in both cases. In one child we obtained a fine functional and anatomical result; in the other infection ensued, followed by a long convalescence and consequently a poor result. The wire is still in position (Fig. 9), while in the latter case the wire was removed a few weeks after the operation.

At times we are compelled to remove plates in those we have operated on before they even leave the hospital. Figure 10 shows the result in a patient in whom the plate was removed eight weeks after operation, the operation having been performed four years previously.

Surgeons have not all agreed that these metallic substances may remain indefinitely but rather approve of removing them as soon as their period of usefulness has been fulfilled, in other words when firm union has taken place. But as stated before, we see no good reason for removing these foreign bodies so long as no irritation has resulted.

In reviewing the literature we find there is no specific paper on this subject. Lane in his book mentions the fact that plates need not be removed, that when it becomes necessary to remove them it is due to poor technic. Eddington, on the other hand, removes plates within three or four weeks. He emphasizes the fact that in the use of Lane plates perfect alignment is essential to obtain a good result. A. H. Harrigan also makes a powerful plea for the efficiency of plates in the treatment of fractures of long bones. However, I cannot agree with all he says. He believes that in some instances plates should be removed.

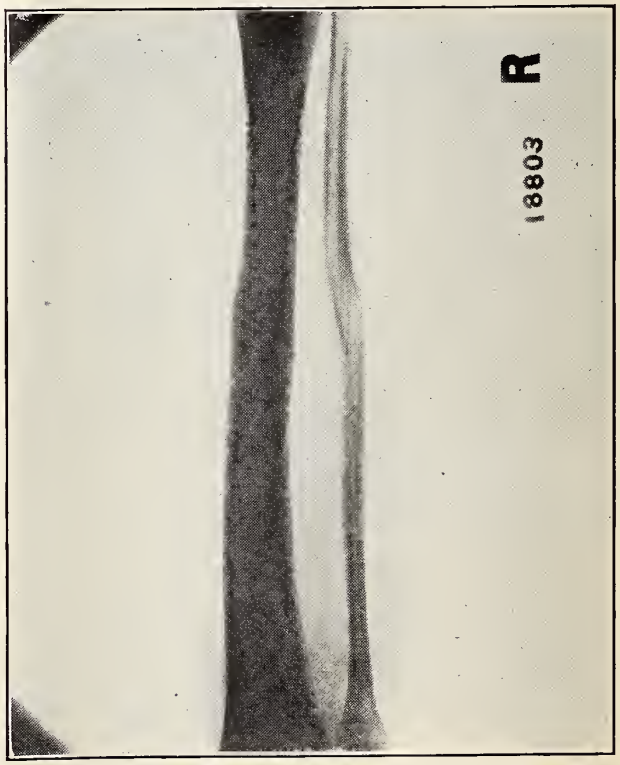


Fig. 10.—Illustrates a case in which the plate was removed after its period of usefulness had been fulfilled; eight weeks after operation.

We must at all times be conservative in the treatment of fractures because we are dealing with structures which are easily infected. In case an open operation is deemed essential, we must have in mind certain fundamental and

logical procedures. In a recent simple or compound fracture in good position that can be maintained by means of splints or other means of fixation, it would be folly to perform an open operation. But where perfect or nearly perfect alignment cannot be attained, some form of open operation is indicated. This ought not to be done immediately after the fracture has been received, but one should wait at least from ten days to two weeks following the incidence of the fracture, the object being to allow the lymph

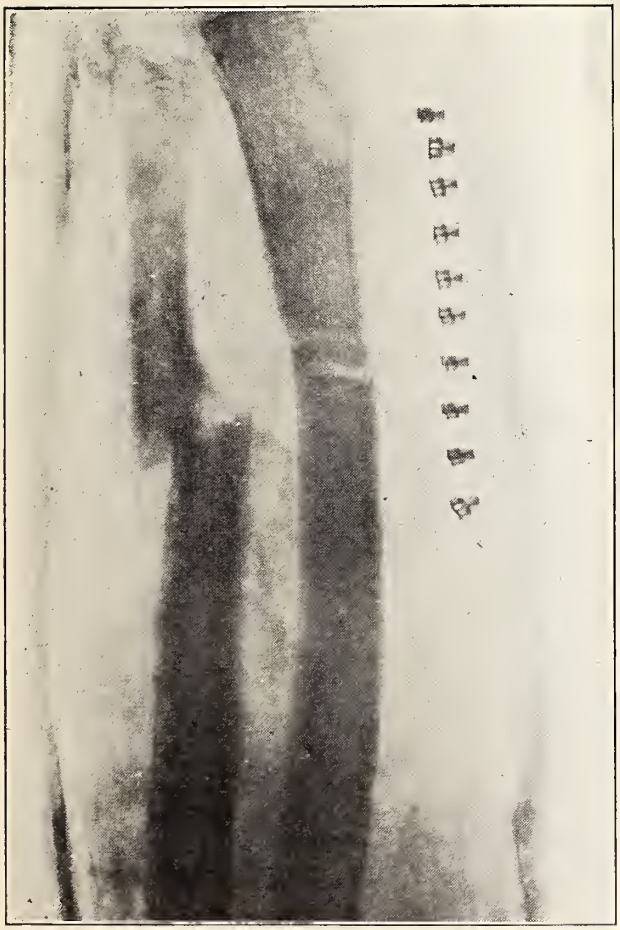


Fig. 11.—Reduction of fracture of both bones of the forearm and retention of fragments without the use of any foreign material. Michel clips used to close the incision in the skin.

spaces to close, thus reducing somewhat the predisposition of this type of case to infection.

It may not be necessary to use any means of fixation after the bones have been exposed, a simple reduction sufficing, as in the case of some forearm fractures. (Fig. 11.) In recent fractures where good apposition cannot be maintained and it becomes necessary to use a foreign body, our best results have been derived from the use of metal plates or nails.

No one ever failed to be impressed by the uncanny manner in which the late John B. Murphy would drive a nail here and there, when necessary, in order to obtain the desired position of the ends of bones.

In case of failure of union after the use of metallic substances, it becomes incumbent on us



Fig.—12. A compound fracture healed in a vicious position. See Fig. 13.

to use autogenous bone grafts as advocated and outlined by Albee. This method has never failed to give us good results provided no infection ensued. (Figs. 12 and 13.)

In compound fractures where good apposition cannot be maintained, it may be necessary to



Fig. 13.—Reduction maintained by means of an Albee bone graft.

use some method of fixation. It has been our experience, however, that the best interests of the patient will be served if we keep away from all forms of metallic substance. Compound

fractures almost invariably become infected, and the metal substance causes more irritation and must eventually be removed.

While this paper deals primarily with the ability of the tissues to resist the presence of metallic substances, the method employed follows the principles laid down by Lane under the caption of the "no contact method." The technic is thoroughly understood by all, but strange as it may seem, some surgeons (including orthopedic surgeons) transgress from the well-established and well-tried technic. It has been our experience that whenever we did not strictly adhere to the principles of the no contact method, infection ensued, with the natural result of poor position of the fragments and a prolonged convalescence.

Our interpretation of the no contact method consists in never touching the broken ends of bones with the gloved hand. Instead we use long bone forceps. The sponges are picked from their original packages by assistants by means of forceps. The nurse never touches them. After an instrument is once used it is placed in an electric sterilizer near at hand.

Summing up the foregoing: We are forced to admit that metal plates, nails or other foreign materials may remain in situ indefinitely under favorable circumstances.

That we never fail to remove these materials whenever necessary.

That fractures should be treated by closed methods whenever possible, but that we never hesitate to perform an open operation when indicated.

That when an operation is performed the "no contact" method must be strictly and conscientiously followed.

I wish to thank Dr. Benjamin Lipshutz for the review of the literature.

1738 Pine Street.

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DISCUSSION

Dr. W. Estell Lee (Philadelphia, Pa.): I talked with Dr. Behrend about this discussion before and he agrees with me that he wants me to discuss it rather than approve of it and I have taken one statement in his paper which I think probably will be misunderstood. For. Dr. Behrend in his practice I think it is perfectly justifiable, but as a general practice I think it gives a text for a definite discussion; that is, when it is impossible to obtain perfect or nearly perfect alignment of the bone, open operation is justifiable. After the necessary experience and the development of the exacting technic for the operative treatment of fractures demanded, most surgeons have been surprised by obtaining results similar to those shown to us by Dr. Behrend. Contrary to the early teaching of Lane it is the rare exception instead of the rule in our work to find it necessary to remove plates or bands. But this longevity of foreign bodies in bones is not only dependent upon the perfection of the technic, as Dr. Behrend has emphasized, but even more upon the selection of the cases in which they should be employed. The surgical technic, the equipment, the mechanical principles involved, are so generally known at the present time they admit of no discussion, but the latter phase of the subject Dr. Behrend has not emphasized—and very fortunately for us, as he leaves little else to discuss.

Many surgeons are convinced that with skeletal traction, occasionally combined with open reduction, better results can be obtained than with any form of internal fixation. Though we are not prepared to make such a sweeping statement at the present time, as our skill in the application of skeletal traction develops, we are rapidly discarding most of the so-called indications for internal fixation. As contra-indications to the use of metallic foreign bodies for the internal fixation of fractures we are convinced that infection and nonunion of bones should never be treated in this way. The danger in the presence of infection is now generally accepted. In ununited fractures we consider bone transplantation the rational procedure, and we are more conservative with the fractures in children than Dr. Behrend suggests in his paper. Children are not good risks for such major surgical procedures, while the growing bones will correct marked deformities when subjected to their required function.

By this time you may suspect that instead of advocating open operation and internal fixation as a routine procedure, the enthusiasm for this procedure has not justified the increased mortality resulting from its indiscriminate practice. We may be pessimistic because it is the failures that come to us, but after the recent removal of a Lane plate from a three-year-old child, which had been applied six months previously, we consider it to be the method of last resort. The surgical skill, judgment and operating equipment demanded for the *safe* practice of this method is greater than any other type of special surgery and cannot be obtained by every surgeon.

We feel that it is full time a warning should be sounded against the routine treatment of fractures by this major surgical procedure. That unusual results may be obtained we do not deny, but the average improvement in the functional results that have followed from a fracture of the middle third of the femur, and an ankylosed knee, following the introduction of an intramedullary bone peg in a fracture of the middle third of the femur in an adult, will illustrate these sins of commission.

To recapitulate: We agree with Dr. Behrend that the open reduction and internal fixation of fracture may be followed by brilliant results, but we feel it is an unnecesary and unjustifiable surgical procedure except as a last resort.

Dr. William L. Estes (Bethlehem, Pa.): I feel almost as if my period of treating fractures had ended, but for some recent studies which we made for the American Surgical Association—I happened to be the chairman of the committee. In the study of several thousand cases of fractures, the records of which were sent from all over the United States and Canada, it was interesting to note that of the open method something like 65% resulted in good functional result, whereas with the nonoperative method 75% resulted in good functional use of the part afterward. In other words, the investigation showed that though the open

method gave better anatomical results the closed non-operative method was followed, in the hands of the general surgeon, by the better functional result; and that of these several thousand cases, the time of disability was very considerably increased by the open method. In other words, take as illustration, the femur. The nonoperative method gave an average of 8.2 months disability from the time the fracture occurred until the man was able to go to work; whereas, with the open method is required nine months plus. As to the safety of open methods, the reports show that out of the cases studied, only about 1 in 65 was infected. The reports, however, as a rule, came from men thoroughly competent to do these operations. It is generally conceded they must be done by a man thoroughly equipped to do the work and who has had considerable experience in this line of work. One in 65 of these cases is certainly a very low rate of sepsis.

Dr. Behrend spoke of waiting at least two weeks for operation in cases of fracture which are to be operated upon. Our investigation showed that if the operation was delayed beyond ten days (eight was the average) the time of disability was considerably prolonged, and that though the anatomic results were good in many cases the functional results were bad, or not as good, the reason being that the union was very slow. For many months it was imperfect, and as a result, the individual beginning to bear weight, had bending or distortion at the seat of union. The ultimate result, examined months after the operation, showed not as good functional result as in the case of the man not operated upon.

I have never been able to understand why surgeons have found proper internal fixation apparatus irritating in compound fractures and why they were always condemned, or nearly always condemned. They are the very kind of fractures I feel should have some direct fixation upon the fragments, and in my hands and the hands of my confreres there has never been any reason to fear the application of the direct splint to the bone. It may be the direct fixation plate we use has some special virtue or quality. In 1886 I began to use a little metallic plate of Wessel silver, which is an alloy of silver, copper and zinc, I think. It was shown in experiments at Johns Hopkins that these metals which form the alloy of which the plate is made, have an inhibitory effect on colonies of bacteria, and I am sure from hundreds of cases in which it has been used that it has never seemed to produce irritation. If one is careful of his debridement and getting the wound clean, the plate does not encourage nor provoke suppuration. I believe, therefore, contrary to the dictum, that the direct fixation operations are especially indicated in compound fractures where one can control the after treatment.

Dr. Charles F. Mitchell (Philadelphia, Pa.): I think it a most dangerous thing to ask a surgeon to speak on the subject of fractures, because if once he starts it is difficult to stop him.

What Dr. Estes has said about the use of metal plates, bone-grafts, etc., is very true; but he did not, to my mind, lay emphasis enough on the ability of the surgeon using them. Good results in this line of work depend absolutely on the dexterity and experience of the operator. Casual experience in hospitals where the surgeon only gets a few cases, possibly not over a dozen or half that number in a year, does not tend to make a very finished surgeon in this branch of surgical work. In 1915 I had the pleasure of seeing Tuffier operate on a badly comminuted fracture of the lower end of the tibia. The lower fragment was very small, and the lower end of the upper fragment tapered to a point not larger than a lead pencil. The ends of the bone were brought in apposition and held in place by a small metal plate, the hands of the operator never touching the wound, and a plaster cast applied, in the French way—making a large pad of plaster, moulding it to the part, and cutting away the excess portion. The whole operation did not take over fifteen minutes I know, had I been doing the same operation, it would have required three times as long, and in comparison to his work mine would be likened to that of a blacksmith, while his to the work of a delicate watchmaker.

Dr. Charles E. Thomson (Scranton, Pa.): I went down to the scientific exhibit and brought up these specimens in order to emphasize an exception I want to take to Dr. Lee's remark that the old fractures are not good cases, or should not be nailed. Here is a very old case and it has been reported many, many times, but this man's fracture was three months old before it was nailed and yet you will see from the specimen the very excellent bony union we obtained. I have another case in which 18 months elapsed after the fracture before the metallic fixation was put in, and I showed that man at the Saratoga meeting, had him parade up and down the hall, a year after the fixation. So that if Dr. Lee intended that for an absolute rule I should like to note this exception to it: that we do get good results from metallic fixation in old cases.

Now, if I may be permitted to say a word about fixation generally: I think it is a pretty poor thing on the whole and should only be used as an extreme last resort; and what I mean by that is after repeated attempts at reduction without a cutting operation.

I also want to say a word in commendation of Dr. Estes' statement about waiting two weeks. When the essayist brought up that point I could not help thinking of a remark that Dr. Deaver made one time in connection with making leucocyte counts in cases of appendicitis. He said he could not conceive a man cold blooded enough to wait for a blood count in a case of acute appendicitis. Now why should you wait for two weeks, because you all know the agonies that a patient suffers from an unreduced fracture? I do not believe it is good practice, notwithstanding that there may be something in his point about avoiding infection while waiting two weeks, but I think it is an absolutely barbarous practice. Dr. Estes assures us that it prolongs the period of disability, and we all know that he is talking from hardpan experience. If an effort has repeatedly been made and failed, and it takes a man two weeks to make up his mind whether he should cut on this fracture or not, then there might be some justification for it.

Dr. Harvey C. Masland (Philadelphia, Pa.): I can testify, from personal observation of Dr. Behrend's work, as to his technique and conscientious care in operating, and I am sure that his results will compare with the best. That, however, is not sufficient justification in the light of what Dr. Estes brings to us, gathered countrywide, as to the use of metal plates. If I quote Dr. Behrend correctly, he uses these plates only where he does not get satisfactory replacement by other means. Undoubtedly the commonly used methods of reduction and splinting leave some open operations almost a necessity.

A year ago I presented to the State Society a new method of splinting and reducing acute fractures. In

that paper, published in the JOURNAL, I made the statement that in all acute fractures, treated early, the limb could be brought to the normal length. I felt the majority of the men then present did not believe me. After another year's experience I reaffirm that statement and add that, with the study and application of my methods, fracture deformity should be practically a thing of the past. The bone can be replaced, and full restoration of function depends only on the regenerative abilities of the parts.

All my splints require a rigid anchorage above and below the fracture sufficient to bear and evenly distribute all the pressure that may be necessary. Projecting from these anchorages are splint arms that overlap and are slidable over each other in the fracture area. The splint parts are fitted to each patient and bring into mechanical harmony the normal relations of the buried bones and the surface topography of the parts.

Turnbuckle extension is attached and after complete reduction is effected the overlapping arms are clamped together with an encircling sleeve clamp. Lateral twist or lengthwise shortening of the parts subsequently is impossible. Convalescence is surprisingly comfortable.

DR. E. C. MURPHY (Philadelphia, Pa.): I wish to speak of fracture of the neck of the femur, with nail driven through. Last year I reported 20 cases of fracture of neck of femur treated by the abduction method and during the time of studying these cases I went into the x-ray pictures thoroughly. Most of these cases were of at least two years' duration. Some of them went to four years. Now I found, in all these patients of 65 years, or over, that in the best results obtained, a dense fibrous union occurred and there was no osseous union whatsoever. That was the general rule in those patients over 65 years. Now, I cannot see any advantage in driving a nail through the trochanter into the head of the femur when there is no hope of a bony union. There is no regeneration of bone and certainly the internal part of that nail will become loosened. I think there is too much danger of infection in these patients, who are usually in a very weakened condition and very liable to infection, or pneumonia, and are not good risks for this operation.

DR. BEHREND (in closing): We all agree that we must be conservative in the treatment of fractures, as I stated in my paper. I was rather surprised to hear Dr. Lee speak about the lack of technic. I do not believe he meant to infer that he did not possess the amount of technic and skill required to perform the operation of open reduction for fractures and the placing of the metal plate to maintain the fracture in position; but we seem to gather that there is apparenly a lack of technic either on his part or on the part of those he has seen do this work. There is no question that there are many unnecessary operations being performed for fractured bones. On the other hand, you must all admit that in all instances where nonunion has resulted, it is absolutely essential to do the open operation and use metal plates or a bone graft. We rarely use metal plates in cases of nonunion. They are usually failures in these cases and the greatest success has always been derived from the use of bone graft in such cases.

We are always pleased to hear Dr. Estes talk about fractures, because in this state we look upon him as the leader in the treatment of fractures. He rarely says anything about the subject without teaching us something. I still, however, feel that we ought to plate ten days to two weeks after the accident. In my paper I do not say specifically two weeks. It does not make very much difference whether we plate eight or ten days or two weeks after the fracture has been received. It is a benefit to wait a certain reasonable time, because of the large amount of blood around these fractures, and the many lymphatics that have been opened render the open operation of bones safer if we wait a certain length of time after fracture.

I was very glad to hear Dr. Estes' experience in the fixation of compound fractures. After having heard him I will try this again, and use the same fixation in the treatment of compound fractures. However, it has been my experience that it has not been very gratifying to use this method. The plates all had to be removed.

Dr. Masland's ingenious method of replacing these fractures cannot be accomplished by all. I have seen his apparatus and I am sure that it will assist us to be more conservative in the treatment of fractures and perform less open operations.

There is no question about it that time is a great factor in performing open operations, and I agree perfectly with Dr. Mitchell that entirely too much time is taken in performing the open operation by those who have not had much experience with it. It ought not to take more than fifteen to thirty minutes to put a bone plate in position. Those who take longer should not do it, because they have not mastered the technic, or the use of the instruments that are necessary to perform the open operation for fractured bones.

FRACTURES NEAR THE ANKLE

WITH SPECIAL REFERENCE TO FRACTURE OF THE POSTERIOR MARGIN OF THE LOWER END OF THE TIBIA*

W. L. ESTES, JR., M.D.

BETHLEHEM, PA.

In recent American medical literature, with the exception of textbook narration and an occasional reference to the disability likely to arise from an incompletely reduced "Pott's Fracture," there has been a great dearth of discussion of fractures near the ankle. Ashhurst's masterful review,[1] Speed's report,[2] and a brief paper by Dr. T. Turner Thomas,[3] are striking exceptions. I have, therefore, ventured to present a brief consideration of ankle fractures today.

There has been a tendency in recent years, surviving from the days of the great Irish surgeon, roughly to designate any fracture of the lower third of the leg and involving the ankle a "Pott's Fracture." Study of radiographs of these fractures has demonstrated varied and numerous underlying lesions but we have been slow to realize the great advance in knowledge of the actual fractures this has yielded, and have strangely clung to the old teachings.

*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

There should be the widest possible adoption of an accurate and exact grouping, classification and nomenclature for fractures about the ankle and abolition of obsolete terms.

Fractures near the ankle may be divided into: 1, supramalleolar fractures; 2, separation of the lower epiphysis of tibia and fibula; 3, fractures involving the ankle joint—anatomically, fractures of the malleoli and lower ends of the tibia and fibula. It is to these latter—true ankle joint fractures—that attention is especially invited.

Classification of ankle joint fractures hangs largely on the study and proper comprehension of the mechanism by which they are produced. The indirect violence which usually causes them, increases the normal ankle movement—abduction, external rotation, adduction, flexion and extension—until fracture results. The heterogeneous lines of fracture in tibia and lower fibula remain a thorough enigma, until this conception of their origin is applied. There are, then: 1, abduction fractures; 2, external rotation fractures; 3, adduction fractures; 4, flexion fractures; 5, extension fractures.

Fracture may also occur at the ankle by compression, and, very rarely, a direct injury. Though Roberts and Kelly[4] and, to a less extent, Stimson[5] and Speed[6] have indicated this division, it remained for Ashhurst to detail a classification. His description has been very closely followed in this discussion.

Abduction Fractures: 1. When the foot is forced in abduction, the first structure to give way is the internal malleolus, as a rule torn asunder near its tip or center. Less commonly, the internal lateral ligament is ruptured, the malleolus remaining intact. 2. If the force or strain continues, the inferior tibiofibular ligament will be ruptured, permitting diastasis of the tibia and fibula, or, if the ligament holds, the external malleolus will be fractured. More commonly, the anterior portion ruptures and a fracture of the fibula above the malleolus, usually at or near the surgical neck, results from bending. When the fibula finally gives way, diastasis, as a result of rupture of the tibiofibular ligament, occurs and lateral deviation of the astragulus and external malleolus is permitted. With diastasis and rupture of the inferior tibiofibular ligament, there may be fracture of the "anterior tubercle of the tibia" (Ashhurst), i. e., the external articulating surface of the tibia.

Abduction fractures are, then: First degree—fracture of the internal malleolus alone, usually of the tip or through its middle. Second degree—fracture of the internal malleolus, or rupture of the internal lateral ligament, with fracture of the external malleolus or shaft of the fibula, with or without diastasis of the inferior tibiofibular articulation. Third degree—fracture of the internal malleolus, or rupture of the internal ligament, with fracture of the external malleolus or shaft of the fibula, with or without diastasis of the inferior tibiofibular articulation, or fracture of the external surface of the tibia, and lateral displacement or dislocation of the astragulus. True Pott's fracture would fall into this group.

External Rotation Fractures: When forced beyond normal limits, external rotation is more prone to cause fracture than internal rotation because the range of normal internal rotation is greater. External rotation causes: 1. An oblique fracture of the lower end of the fibula from above downward and forward, which usually extends to the external malleolus below the tibiofibular articulation. No displacement. 2. If carried further, external rotation will next fracture the internal malleolus, usually the tip, or rupture the internal lateral ligament. 3. There may be diastasis of the lower tibiofibular articulation or fracture of the external articulating surface of the tibio-anterior tubercle. If this occurs, it takes place at the time of fracture of the fibula, and the fracture of the fibula may then be high—the middle or upper third. 4. Fracture of the posterior margin of the tibia. 5. Posterior dislocation of the astragulus.

External rotation fractures then, may be: First degree—oblique fracture of the lower end of the fibula. Second degree—oblique fracture of the fibula with fracture of the internal malleolus or rupture of the internal lateral ligament with or without fracture of the posterior margin of the tibia or external surface of the tibia. Second degree—variation—fracture of the fibula, high or atypical, with diastasis of the tibiofibular joint or fracture of the external articulating surface of the tibia. Third degree—Second degree fracture plus posterior dislocation of the astragulus.

Adduction Fractures: The first lesion to be produced by forced adduction is fracture of the external malleolus—transverse and below the level of the lower end of the tibia. If carried further, the internal malleolus is fractured longitudinally and near its base. This may even be a long split up through the tibial shaft.

Adduction fractures may, therefore, be: First degree—fracture of the external malleolus—transverse. Second degree—fracture of the internal malleolus—longitudinally near the base, and fracture of the external malleolus.

Internal Rotation Fractures have not been recognized as separate from adduction frac-

tures. A certain amount of internal rotation probably accompanies a certain number of adduction fractures.

EXTENSION FRACTURES: A simon pure extension fracture is exceedingly rare, unless isolated fracture of the posterior margin of the tibia be included. Some extension is present in many external rotation fractures in which posterior marginal fracture with posterior dislocation occurs. However, fracture is not necessary for posterior dislocation.

FLEXION FRACTURES are likewise exceedingly rare. Isolated fractures of the anterior margin of the tibia are probably the only recorded instances of fracture by flexion.

FRACTURES BY COMPRESSION may be either: 1. Marginal tibial fractures. 2. "T" or "Y" fractures.

Abduction and *external rotation fractures* are by far the most common lesions. *Adduction fractures* are infrequent. *Flexion, extension* and *compression fractures* are rare. *Direct injury fractures* are exceedingly uncommon. Ashhurst finds that external rotation causes 61% of ankle fractures; abduction, 21%, adduction, 13%, and the rarer types of fractures but 5%.

FRACTURE OF THE POSTERIOR MARGIN ON THE LOWER END OF THE TIBIA, or "the posterior malleolus" as it has been called, seems to have aroused but sporadic interest in America, though apparently recognized elsewhere, notably in France. It was noted as early as 1822 by Cooper, by Earle in 1828, and by Adams in 1835.

It is far more common in association with other lesions than as an isolated fracture. Ashhurst found it present in 19% of all ankle fractures, Chaput in 30%, Destot in 8.5%, Quenu in 9.3%, Sears in 18.6%, Speed in 10% (Ashhurst). Ashhurst states it may occur in external rotation fractures with oblique fracture of the lower end of the fibula, in abduction fractures, or in single diastasis of the tibia and fibula with linear fracture of the external articulating surface of the tibio-anterior tubercle, or with a single fracture of the internal malleolus.

It favors posterior dislocation of the ankle. Continuation of the force after fracture has been produced causes displacement and dislocation, and recent reports by Quenu,[7] Ashhurst and Thomas assert that it is present practically invariably in posterior dislocation; that is, in very rare instances only has posterior dislocation of the ankle taken place without it.

ISOLATED FRACTURE OF THE LOWER POSTERIO-TIBIAL MARGIN: As an isolated fracture it is comparatively rare. The first case was reported by Meissner[8] in 1908. Tanton[9] found but twenty cases reported up to 1916, and I have been able to discover but seven cases since then—three of Sear's,[10] one of Ashhurst's, one of Metzger's[11] and two of my own—twenty-seven in all. It is probably of more frequent occurrence than reports indicate.

ETIOLOGY AND PATHOLOGY: As accounts of the accidents demonstrate, it is caused by a force from below upward with the foot in plantar flexion or extension: Destot,[12] a quick stop while playing tennis; Quenu, a fall upon the foot in extension; Meissner, a fall from a ladder; Metzger, jumping and landing upon the foot extended.

Traction by the inferior-posterior tibiofibular ligament may be a factor and cause simply a fracture of the posterior tibial tubercle—a linear splitting off of the tubercle, not involving the joint. Frank marginal fracture always extends to the joint surface, and may include but a small portion of the tip or involve the entire posterior-inferior tibial surface.

The fracture is usually one to two cm. from the posterior edge but always behind the weight-bearing central axis. (Metzger.) There is no displacement except, rarely, a slight tipping of the fragment.

The SYMPTOMS are variable and hardly to be considered characteristic or pathognomonic, so that the lesion may easily pass for a simple sprain. There is usually pain in the ankle and inability to walk or bear weight.

The following SIGNS may also be present: 1. Swelling about malleoli and ankle. 2. Ecchymosis behind the ankle, beginning at the internal malleolus (but this is inconstant). 3. The foot may be held more or less in plantar flexion-equino position. (This was quite marked in Meissner's and Metzger's cases, and in two of Quenu's.) 4. Voluntary movement from this position is impossible or very painful. Passive motion is limited and painful. 5. There is pain on pressure over the posterior malleolar gutter but no crepitus.

DIAGNOSIS: Unless the position of the foot or local tenderness arouses suspicion, this fracture may easily, and probably often does, pass for a sprain. Positive diagnosis can only be made by a radiograph—lateral stereoscopics are probably the best, though the usual lateral and anteroposterior views are quite satisfactory. It is *plainly* visible on a lateral, but only dimly, even on an excellent anteroposterior plate, as a deltoid shadow over the lower end of the tibia.

PROGNOSIS: The results in isolated fracture have been uniformly good. In complicated fracture, especially with posterior dislocation, if the

fracture be unrecognized, serious permanent disability will result.

TREATMENT: If the foot cannot be brought in dorsal flexion to a right angle or beyond, an anesthetic should be given. The foot is placed in the over-corrected position and a plaster cast applied to maintain it. This may be removed after three weeks, when massage and passive motion is begun. Weight-bearing should be cautiously permitted after four or five weeks. Recovery is usually complete in six or seven weeks.

CASE 1: A college student, aged 19, while playing basketball, jumped in the air for the ball and came down upon his left foot. In spite of immediate severe

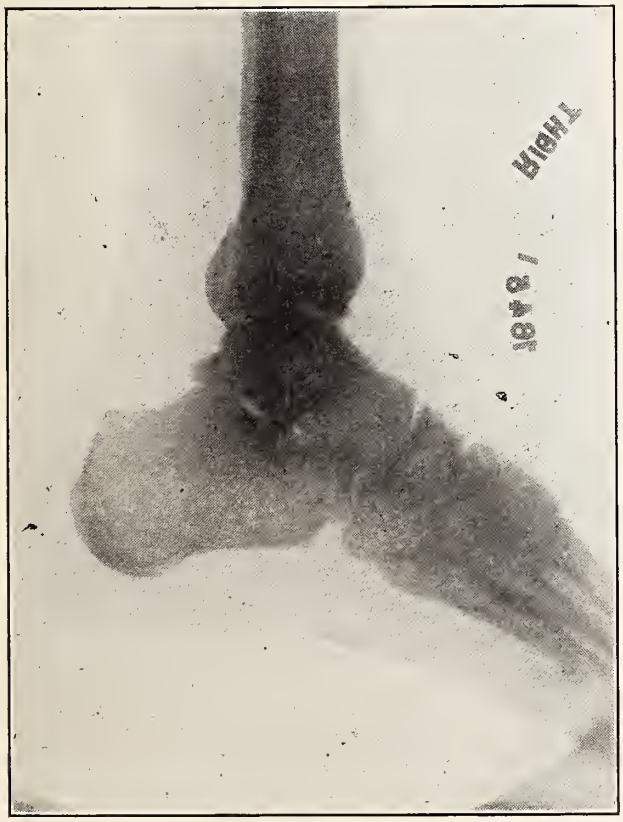


Fig.—1.

pain in the ankle, he resumed playing for four or five minutes. He was able to walk with a limp but could not continue playing.

The following day he reported to me, walking into the office with the aid of a cane. There was a marked limp. The left foot was in very slight plantar flexion with slight swelling about both malleoli, especially the internal. There was slight tenderness behind and median to the internal malleolus; none elsewhere. No ecchymosis. Voluntary motion was markedly limited —practically nil. Passive motion was only one-half of normal, and quite painful.

Because of the local tenderness, a radiograph was advised, and revealed a fracture of the posterior surface of the lower margin of the tibia, extending barely to the joint—"probably a sprain fracture of the posterior tubercle." (Fig. 1.)

The foot was placed in right-angled flexion and a cast applied from the toes to the lower third of the leg. This was removed in two and a half weeks. The recovery was uneventful.

Final result—complete return to normal function.

COMMENT: Fall upon the foot in extension; local tenderness behind the interior malleolus; sprain fracture of the posterior tubercle; cast applied for two and a half weeks. Complete recovery.

CASE 2: The following case is reported through the courtesy of Dr. W. D. Chase.

Mrs. C. E. M., aged 31 years, while walking on a slippery, icy pavement, fell, her ankle twisting under her. She was unable to walk without assistance and any weight-bearing was extremely painful. There was swelling about both malleoli. No local tenderness was observed and no tendency to plantar flexion. The

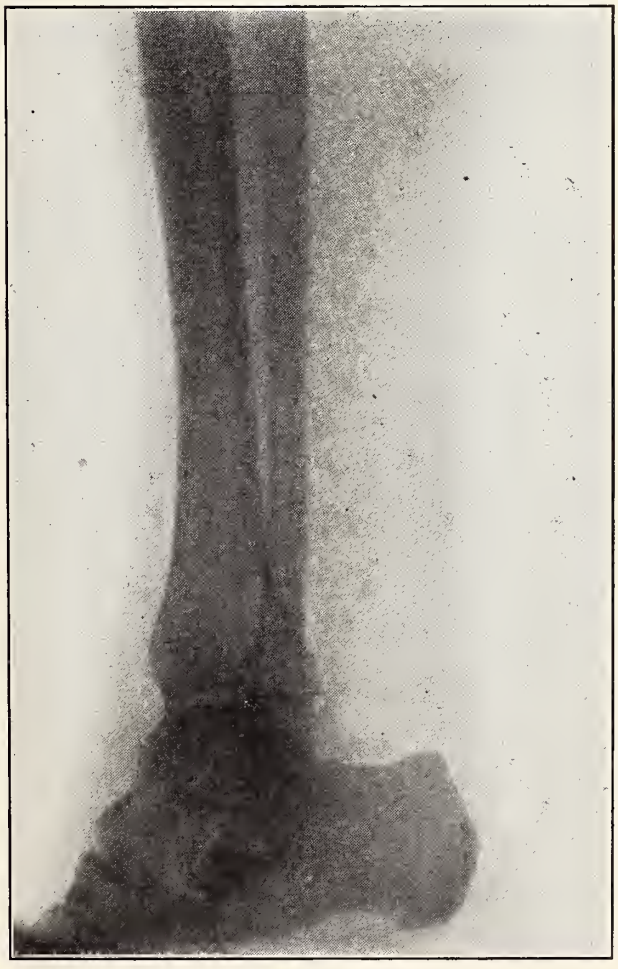


Fig.—2.

radiograph showed splitting off of the entire posterior margin of the tibia; no displacement; no other fracture. (Fig. 2.) A cast was applied for about four weeks. Crutches were used for three months. There is still some stiffness in the ankle, and occasional pain. Dorsal flexion is somewhat limited; plantar flexion is normal.

COMMENT: A fall upon the foot; direction of the fracturing force not certain; a true posterior marginal fracture; cast applied for four weeks; prolonged convalescence; slight permanent disability.

CONCLUSIONS

1. Fracture of the posterior margin of the tibia is a fracture that deserves wider recogni-

tion and is a serious and usual complication of posterior dislocation of the ankle.

2. It may occur with abduction and external rotation fractures of the second degree.

3. As an isolated lesion, it is probably an extension-compression fracture and is of more frequent occurrence than reports indicate. There is little or no displacement of the fragment. Following recognition and simple immobilization, recovery is usually prompt and complete. In one case here reported, slight permanent disability persists.

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DISCUSSION

DR. CHARLES F. MITCHELL (Philadelphia, Pa.): I fully agree with everything Dr. Estes has said in his most interesting and instructive paper on "Fractures Near the Ankle," and I think we should thank the writer for bringing to our notice a correct classification of fractures in this region. As was mentioned, "Potts" is the common name applied to any and every fracture occuring in this locality, and I imagine we one and all have been guilty of falsely using this name in describing some of our cases. The paper has so fully described the various fractures, the mechanics of their production, etc., that there is nothing to add along this line. I imagine, however, that fracture of the posterior malleolus is much more common than the percentage of reported cases leads us to believe, and also the failure to have x-ray pictures of every simple injury of the ankle-joint has greatly lessened the number of cases which should come under this heading. Injuries, not only about the ankle, but involving any joint, should always be x-rayed. In case of posterior dislocation where reduction is difficult, the cutting of the tendo achillis will greatly facilitate in the reduction.

To digress somewhat from the subject of this paper, I do not think the subject of fractures receives enough attention in our medical schools. Our interns of today know everything about gastro-enterostomies, brain tumors, etc., but hardly know the name of a single splint or how to pad one.

A careful record should be kept in all fracture cases and this has been made quite simple if one uses the fracture record blank, as suggested and adopted by the American Surgical Association, of which Dr. Estes, Sr., is really the father.

DR. W. ESTELL LEE (Philadelphia, Pa.): This is one on Dr. Dorrance. He told me that I would not be allowed to discuss this paper, so I did not prepare any discussion. I had the privilege of reading Dr. Estes' paper and particularly the classification. The fractures at ankles have interested me, especially in the dispensary work, in the end results; in other words, in the duration of temporary and proportional permanent disability. I think if some of the chiefs of services in general hospitals could follow their end results in injuries about the ankle they would be very much surprised at their unsatisfactory results. The disability, the limitation of motion due to fibrosis, and finally to bony ankylosis and the last, or most crippling, of toe drop. All of them, except the latter, we know how to correct and I think more or less routinely (that is, early motion of ankle, the padding or lifting of inner edge of shoe or heel, to overcome abduction) but toe drop is, I think, frequently overlooked. My first impression of toe drop was with the French surgeons in 1915. Whether the French soldiers acquired toe drop because they did not want to go back to the trenches I do not know, but an enormous proportion went around the streets of Paris with toe drop. It was appalling. Dr. Powers showed how simple it is to correct by tenotomy of the tendo achillis.

Soon after my return I had my first catastrophe in consultation on a patient who had toe drop from what I now know was a fracture of the posterior lip of the tibia, and she had a permanent disability. With that in mind my next opportunity was the wife of a lawyer. She had very much more marked deformity posterior than any of the pictures Dr. Estes showed, due to an external rotation fracture of the fibula, and she had at least 50% dislocation which I could not replace under an anesthetic. Tenotomy of the tendo achillis overcame our difficulties. It has been called attention to by a number of surgeons, but I think that the average surgeon realizes the importance of this.

DR. EUGENE C. MURPHY (Philadelphia, Pa.): In the first part of his paper Dr. Estes makes a plea for correct diagnosis, nomenclature and proper classification of fractures involving the ankle joint. This is very interesting to me, because in the last three years I have been making a study of fractures involving the hip joint and the ankle joint and have been collecting the cases. I found that, in collecting fractures involving the neck of the femur, I had 34 cases of so-called intracapsular fracture according to the diagnosis in hospital and according to the outside sheet. When I got out the x-ray plates and checked up with the records I dropped down to 20 so-called intracapsular fractures.

Now the ankle joint is worse. Pott's fracture seems to be the easiest way of discharging a patient in a hurry that has had a fractured ankle. It does not mean anything. For some time I have paid no attention to the diagnosis of Pott's fracture, but would go through the charts and look at the x-ray report and would find in this report a correct diagnosis. The interne in his hurry to discharge his patient puts it down and that is what goes on file.

We have instituted a method of overcoming that. Let each man in the institution check up his own histories. Now this seemed to be a disagreeable task when we started it and the men said they could not spend their time in the office checking up histories, but I find that the most of them do not spend more than an hour a week and the histories have certainly improved. There is no one knows more about the patient than the one who is treating him. It used to be left to the chief resident, and most times he knows less than the interne about the patient. Besides the man who has charge of the patient and treats him, he O.K.'s the record. That is all very well, but we have a committee who are up in nomenclature, who also check up that history before it is filed away and in that way you will be able to get out statistics that are really accurate.

I have never seen, so far, an isolated case of fracture of the posterior portion of the tibia, but I do find in the last seven years that we had three cases of fracture of the posterior surface of the tibia, but it was associated with posterior dislocation of the ankle joint. I think that even at that there are probably many we miss. The old time way of taking an anteroposterior view and a lateral view of the ankle joint, or any joint, I do not think is satisfactory. Stereoscopic picture of the joint is the ideal way to study a joint. You have the whole thing before you and can see the depth, or any condition that would show the faintest trace of fracture, which would help you a whole lot in treatment of that case. I know we would have less omissions and more correct diagnoses in fracture of a joint in any part of the body if we insist on a stereoscopic x-ray picture.

Dr. T. Turner Thomas (Philadelphia, Pa.): I wish to express approval of Dr. Estes' classification of these fractures according to the fracturing force. Muscle contraction will hold the fragments in the position determined by the fracturing force, but in my opinion they will not determine the typical character of the deformity. The influence of the fracturing force can be best seen at the ankle and the wrist where the force of the fall on the hand is so obvious. But the further up the limb we go, upper or lower, the more difficult it is to trace the influence of the fracturing force.

My special effort has been to show that the usual fracturing force results from the fall. The most common consequence at the ankle is abduction. I believe that external rotation almost invariably accompanies abduction here. My limited opportunities for studying x-ray illustrations of the common fractures of both bones of the leg and shaft of the femur suggest to me that the abduction deformity is most common in them as at the ankle. For example, in the very frequent fractures of both bones of the leg about the junction of the lower and middle thirds, the lower fragments are not usually displaced backward, which is commonly taught and explained by the pull of the powerful gastrocnemius and soleus; but are usually displaced externally, probably from the same force as the abduction fractures at the ankle.

But even at the ankle we are only beginning to take full advantage of our knowledge. If abduction produced the fracture, then the best way to correct the deformity is to adduct the foot and hold it in this position, and if it took a severe force to produce the deformity it will likewise require a strong force to correct it. It will not suffice to place the foot in a fracture box and tilt the foot over with a soft pad. The principle of the Dupuytren's splint for Pott's fracture is correct if we use force enough. I prefer to put the patient fully under ether and powerfully force the foot into overcorrection and hold it in this position with a plaster cast. According to my experience we are much more likely to use too little than too much force in correction. This applies, however, only to fractures of the ankle and not to fractures of the shafts of the tibia and fibula further up the leg. Overcorrection is too easy there.

There is only one way to determine the degree of correction accomplished by these manœuvres, i. e., by a comparison of the x-ray pictures taken before and after the correction. Often the fracturing force was not great enough to produce deformity, so that efforts at correction accomplish nothing.

To attempt correction without a general anesthetic will often accomplish practically nothing, because the patient will defeat the effort by his own muscle contraction. The correction is usually very difficult with the aid of the anesthetic and impossible without it. When it is accomplished, if the reducing force is relaxed, the fragments will easily return to their deformed position, due to the muscle contraction. This is a fruitful field for discussion. Should we or do we dare to use plaster casts? I have used them many times, but they must be watched.

Dr. Estes calls attention to the fact that in only very rare instances does posterior dislocation of the ankle occur without posterior marginal fracture of the tibia, but that more commonly this fracture takes place without the dislocation. This means, in my opinion, that the first effect of the fracturing force is the fracture, which may be incomplete or complete or may be accompanied by displacement according to the degree of force applied.

Dr. Jonathan M. Wainwright (Scranton, Pa.): I think we all ought to thank Dr. Estes and Dr. Behrend for still having enough of the pioneer spirit to present fracture papers to the State Society and we ought also to thank the Section officers for letting them slip in. To the general profession, by and large, in this state, there is no subject, I think, that is more important than the treatment of fractures. We have our industries, with enormous numbers of accidents, and besides that we have the highways, which are perhaps more important at the present time. You all know it is more dangerous to cross a highway in Pennsylvania than it was to go across the submarine zone during the Great War. There were 5,600,000 soldiers transported across the English Channel, without losing one. Let 5,600,000 men amble across the Lackawanna Trail and see what happens.

The whole subject is important, especially fractures around the ankle. Corporations and relatives, institutions, almshouses and so on, are paying an enormous amount in this state for disability on account of fractures of the ankle. There are many men in poorhouses because they had a broken ankle and the result has been such that they cannot work any more. The state suffers considerable loss of money because their ankle joints are partially or completely disabled; so that there is nothing that we can be taught, like Dr. Estes has taught us to-day on the ankle fractures, that is not of the greatest importance, and I am sure that we have all been well repaid in having ankle joint fractures brought to our attention again in such an interesting way.

As Dr. Murphy says, there is not much more to say about it. I think it is too bad to let any discussion on fractures end without emphasizing the importance of the physical therapy afterwards. I think a physiotherapy department or a gymnasium is just as important a part of every large general hospital in a big city as an operating room, or any other part of a hospital. Two or three years ago we established one here, and after we had been running it a year we found we had reduced the disability in this particular type of fracture by just about 30 days, saving one full month. Now on the average we are getting our fractured ankles back to work in three months. That sounds like a long time, but for us up in these regions, where our patients have to get back to work in a coal mine, or hop around on a freight train, we feel three months is a gratifying period of disability. We feel that we have a very complete gymnasium in the Moses

Taylor Hospital and we should be very glad to have any of the members see it.

DR. DONALD GUTHRIE (Sayre, Pa.): A point which I considered of great value was to overcome toe drop by tenotomy in fracture of both bones of the lower leg.

DR. ESTES (in closing): I took the liberty of speaking on the classification of fractures of the ankle—perhaps a little difficult to listen to—because, with a proper understanding of the classification and cause of fracture, it seems to me the treatment would become far more intelligent. When you understand the actual lesions, satisfactory treatment can be so much better undertaken, and x-ray plates more readily interpreted. As brought out by one of the discussers, deformities as a result of fracture must particularly be properly corrected, even the slight displacement of the astragulus, which may be only discernible by x-ray.

I was glad to hear the point brought out about division of the tendo achillis. In Dr. Thomas' report, which deals largely with fracture of the posterior margin of the tibia in connection with posterior dislocation of the ankle, he cites one instance in which three attempts were necessary before complete reduction could be obtained. I do not think he finally resorted to division of the tendo achillis. I did not appreciate the special value of this procedure until emphasized by Dr. Lee and Dr. Mitchell.

The point Dr. Murphy stressed, on the importance of stereoscopic pictures in ankle fractures can well be reiterated. I shall not feel confident that we have thorough knowledge of these fractures until we have studied them stereoscopically.

I shall be very glad to see Dr. Wainwright's mechanotherapeutic department, as I realize the necessity of proper after-treatment in fractures and the great benefit of well-conducted mechanotherapeutics.

MYOCLONIC ATTACKS*

EDWARD E. MAYER, A.M., M.D.

PITTSBURGH, PA.

Irritative phenomena of a clonic type affecting isolated muscle and muscle-groups are frequently encountered in diseases of the nervous system. Medical literature contains descriptions of many forms, together with the attempts of their authors to rear up new syndromes because of minor clinical differences.

A number of these hyperkineses, although differing in origin and pathogenesis and therefore in chronicity and progress, have been grouped under the general name of myoclonus because of a clinical similarity. This name, as its Greek origin testifies, signifies a severe muscular contraction, a muscle tumult or muscle shock. The contractions in true myoclonus are unrhythmical and intermittent, non-synchronous, generally electric-like in their quickness, involve muscle groups not under voluntary control and very often muscles which are not used coördinately. No or little movement should, therefore, accompany the attacks. As with every clinical sign, its association with other symptoms, as also its chronicity, severity, and scope in involvement of muscles, has given rise to varied descriptive divergencies and different interpretations.

Friedreich's original description of paramyoclonus multiplex tended to these differences, in that he described multiple myoclonic twitchings in a tuberculous carpenter, which the patient attributed to a violent fright five years before, at the bursting of a circular saw, and which were "cured" by a few galvanizations. The intimation was very plain that his patient, Ludwig Berlein, had a neurosis caused by a fright and cured by suggestion, so that by a natural way, the literature of that time recognized in the myoclonia, syndromes of an hysteriform nature.

There grew up a fairly large literature upon this basis, the writers shading their nomenclature into the tics and choreas on one side and towards the myospasms and tremors on the other. The only association which seemed to link them together was an unknown and supposedly a so-called neurotic origin. Some years later, however, another type of myoclonus was described by Unverricht. He called attention to the association of myoclonus and epilepsy in members of the same household, without the former syndrome being handed down to a succeeding generation. He was followed by several writers (Clark and Prout in the U. S.) who called attention to the association of various spasmodic tics with the epilepsies and spoke of epileptoid myoclonus. In this connection, one can refer to Tourette's disease, the chronic choreas of the degenerate, perhaps, to Collin's tic neurosis and also to the myoclonic nystagmus of Lenoble-Aubineau as being somewhat similar types of syndromes.

Leading us farther afield, Lundborg followed Unverricht with descriptions of a familial type of myoclonus allied to epilepsy with which there later developed dementia. He concludes, because dementia occurred in his myoclonic patients, that myoclonus is "a disease which is closely allied to dementia præcox, especially the catatonic forms." He rears up, therefore, another disease type, namely, myoclonic dementia. It was also Lundborg, in another of his articles, who attempted to show a relationship between myoclonia and myotonia (Thomsen's disease). Because these types of myoclonus would not fit in with a neurotic or hysteriform pathogenesis, there arose the idea of a metabolic origin or endogenous toxemia as a cause of these myoclonia. But the tendency remained to consider all types as something *sui generis,* assum-

*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

ing always that there was no organic disease of the cerebrospinal axis as a cause and that the myoclonus was not merely a symptom but a distinct syndrome. In fact, many, like Dana, excluded the symptomatic myoclonic attacks from any association with the myoclonia.

This assumption I can hardly believe was ever justifiable. Perhaps the occurrence of myoclonic shocks in acute diseases of the cerebrospinal axis was not frequently observed in former years, or perhaps the fixity in conception of the origin and chronicity of myoclonus, together with the insistence that it was not associated with paralysis, pain, trophic disorders, etc., and was degenerative, led to an ignoring of acute types except in connection with hysteria. The so-called spinal epilepsy, for instance, observed after some acute spinal cord diseases, is certainly similar in manifestations to myoclonus. Although it was recognized and described years ago at about the same time as the various myoclonia were, I do not recall that it was ever associated with myoclonus. A spinal origin for myoclonus was, however, argued for by many writers. J. Ramsay Hunt, for instance, has published a classical paper advancing this opinion, in which he cites as proof the etiology in several cases—"lead intoxication (Huber), old poliomyelitis (Williamson, Walton), low grade neuritis (Biancone), sciatica (Gowers)." He speaks of those rare cases in which paramyoclonic twitchings have occurred in the course of organic disease of the cerebral cortex, but dismisses a cortical origin as the probable one for myoclonic attacks. The recent invasion of lethargic encephalitis and the frequency of myoclonic twitchings in this disease, again focused our attention upon the controversy between a spinal or a cerebral origin, inasmuch as in encephalitis both upper and lower motor neurones may be involved and, in addition, neurotic types of encephalitis have been frequently described. It has led us further away from the old functional conception and, in most instances, established a spinal origin, from the necessity of recognizing that the clinical type of a cortical involvement in irritative lesions is a synergized movement and not vermicular movements of isolated muscle masses as is found with the myoclonia. Nevertheless, the type, as found in chronic cases, without pain, without other symptoms of the lower motor neurons, and accompanied by a certain amount of mental reduction, is not explainable on a spinal basis.

The few cases of hemimyoclonus described by Bernhardt, Minkowsky, and Seeligmuller, thirty years ago, as evidence of a cerebral origin, and which Hunt considered as weighing but lightly in the balance, arouse to my mind renewed interest because of the type of myoclonus observed in lethargic encephalitis, and the unanswered question as to just what these men did observe. With myoclonus to-day such a type is rare, although myoclonus has been a common symptom—so common that it is lately regarded as a diagnostic symptom of encephalitis of the spinal type, especially diaphragmatic myoclonus with hiccough as a result.

Myoclonus is, therefore, a symptom of irritability of the motor neurones of indefinite or variable origin. Occasionally it is the only symptom. It occurs as a symptom in the course of the meningo-encephalitides, or as the chief symptom in chronic affections of obscure infectious origin. The tendency seems to be to ignore any possibility of a cerebral (cortical) origin and to regard it as a spinal manifestation. Hunt has recently again written upon this subject in order to stress the affinity of certain strains of the same infection for certain tissues of the nervous system, producing an especial clinical type of reaction. Such forms are the acute infectious myoclonus multiplex and epidemic myoclonus multiplex. Why it does not occur often in other infections of the nervous system and is so common in lethargic encephalitic patients is not, however, as yet explainable.

Myoclonus cannot be considered any more, therefore, than merely a syndrome associated with hysteria, accompanied by emotional and vasamotor symptoms, under the influence of the will, disappearing in sleep and ceasing when the patient's mind is occupied with other things than his personal conflict. Nor can we to-day agree with those who argue that it is functional, although not hysteriform, but that the hysteria follows the myoclonic movements, is caused by it, and is allied to the convulsive tics. Nor can one hardly reconcile such archaic views with the opinions of those who regard the attacks as evidence of focal infections. If we study the pages of our present textbooks we realize how much is necessary to clarify the present situation.

Many myoclonic types have been observed by me in the last twenty years. They have not in any respect differed from those cited in the literature and I shall not, therefore, take up space to describe any except a recent case of *hemimyoclonus accompanying a three months' coma* in a patient who was suffering from paretic dementia. Because this patient had following his "apoplexy" a picture which resembled those shown in lethargic encephalitis and yet clinically was paretic dementia makes his history interesting. As is shown below, the laboratory confirms this diagnosis. The description follows:

J. A. came to me several years ago for treatment of his chronic headaches. He was in active business, endowed with a brilliant mind, and given to no bad habits. At that time he had a beginning interstitial nephritis, as shown by his urine, but otherwise there were no particular findings. A blood Wassermann was made and reported as negative. Three years later, business reverses came to him and his headaches were increased and were accompanied by sleeplessness, a beginning irritability, and slight lapses of memory (Sept.-Oct., 1920). To these symptoms were added a dry cough and some loss of weight. Increased breath sounds and roughened sounds with the spoken voice were found over the right lobe.

These symptoms persisted throughout the winter. Early in the spring of 1921 he was placed under Dr. Hoover, of Cleveland, for observation, who made a diagnosis of "beginning malignancy of the mediastinal glands," because of the x-ray pictures, together with the physical findings. The patient still vigorously denied any possibility of syphilis. On his return from Cleveland, nevertheless, after further radiographs, a lumbar puncture was insisted upon and showed a four plus Wassermann, 45 cells to the field, and a paretic colloidal gold reaction. Intravenous arsphenamine injections together with mercurial inunctions cleared up his cough. The nodal lymph glands became reduced, as shown by further radiograph studies, and the hazy shadows simulating a malignant growth disappeared. But a rapid reduction in intellectual capacity took place, despite a thorough antisyphilitic treatment, consisting of intravenous medication, spinal drainage, Swift-Ellis treatments and inunctions, so that a dementia was evident, even to his family, in the summer of 1921. From that time until February, 1922, he remained an ordinary case of paresis with extreme forgetfulness and defective memory for recent events, lost in recollections of an earlier period of his life, with a depression alternating with evanescent grandiose delusions, extreme restlessnes and irritability, occasional tumultuous outburts of excitement, and with the usual physical changes found in paretic dementia.

February 13th, he fell unconscious and remained in a state of somnolency until his death on May 19, 1922, a period of over ninety days. There was at no time stertorous breathing, facial suffusion, or complete immobility. He seemed to recognize the presence of his wife and moved his limbs a little. On a few occasions his wife insisted he muttered her name, but neither a nurse or myself elicited any speech from him. Moaning sounds were, however, quite frequent. Swallowing was difficult at first, but later on he took his food regularly until the last week of this last illness. *At no time was there any paralysis.* The left pupil was smaller than the right. Neither reacted to light or accommodation at this time. The fundi were normal. Shortly after he was found unconscious, the first clonic spasms came on, involving his left face, arm and leg. These were intense contractions of the muscle masses, about eighty to the minute, persisting for the first day without cessation. They occurred largely in non-synchronous muscle masses, without movement of the entire limbs.

In the first twenty-four hours he had, with no effect upon them, 3/4 gr. of morphine, 1/5 gr. of hyoscine, two drams of potassium bromide, and one-half a dram of chloral hydrate. They became intermittent in character after this, accompanied by twitching movements in the intervals. Suddenly a violent jerking of some of the muscle-masses of his left leg would come on, or of his left arm, but rarely would they occur together. Then would ensue clonic movements of his left scalp, left facial and left neck muscles. When these occurred the patient would grow restless, moan incessantly, and his breathing would become irregular, so that the picture was quite agonizing. Occasionally there occurred clonic twitchings of his left abdominal muscles. At the height of these seizures, his eyes would turn toward the left side. Upon two occasions a slow lateral nystagmus occurred, lasting over an hour. No narcotics seemed to produce any effect. The other details in respect to symptoms and treatment are not important, except that his temperature was between 100 and 101 degrees F., for the first three days and then sank back to normal, that a lumbar puncture showed a fluid filled with fresh blood, and that his blood-pressure had dropped to 128 S—70 D.

A clinical diagnosis was made of ventricular hemorrhage, producing a hemimyoclonus with a somnolency simulating a lethargic encephalitis.

The autopsy findings were made by Dr. Henry Ray, pathologist to the Southside Hospital of Pittsburgh. No permission could be secured to obtain anything except the brain.

ANATOMICAL DIAGNOSIS

Brain: Chronic pachymeningitis interna. Intense subpial edema with cystic collections of fluid and deformity of the brain by compression. Flattening of convolutions and asymmetry. Cerebral congestion with softening. Hyperplasia of choroid plexus. Ependymitis granularis.

PROTOCOL

The body is that of a well developed white male of good musculature, but showing evidence of emaciation. Weight is about 115 pounds and length is 66 inches. The vertex of the skull shows a large area of alopecia but the facial, axillary, and pubic hairs are normal in distribution. There is no discharge from the external orifices. Left pupil is contracted and somewhat irregular; right pupil is in mid-dilation. Malar bones are quite prominent from sinking of cheeks. Neck, chest and abdomen are normal in shape and there are no visible or palpable masses. Epitrochlear and inguinal glands are definitely enlarged and firm. External genitals show no gross changes. There is no edema and rigor mortis is present. The skin of the back shows postmortem discoloration.

Tissues of the scalp are very thin and temporal muscles are somewhat atrophied. The calvarium saws through with difficulty, the concellous tissue being unusually thick and attaining in the frontal bones a thickness of 1.5 cm. The dura mater is firmly adherent to the vault and is definitely thickened, especially internally, where there are several layers discolored by old blood pigment. There is an excess of clear yellow fluid at the base.

Brain appears to be shrunken, somewhat asymmetrical and weighs 38 ounces (normal weight, 50 ounces). Piarachnoid is opaque, grayish white and edematous, and bulges, from subpial collections of clear yellow fluid which is in places encapsulated and over the left fronto-parietal region forms a cystic swelling which measures 4 cm. in diameter and produces a concavity in the cortex over the Sylvian fissure. Convolutions are generally contracted and flattened and superficial cerebral vessels are tortuous and engorged.

Section of the Brain After Formalin Fixation Over a Period of Four Weeks: It is interesting to note that the ventricles are not appreciably dilated and there is no apparent increase in cerebrospinal fluid. The choroid plexus is hyperplastic and injected and the

ependyma is everywhere thickened and roughened, showing innumerable minute gray sand-like projections. The prolonged formalin fixation renders the gross detection of minute areas of softening and hemorrhage a difficult matter.

MICROSCOPICAL EXAMINATION

One hundred and ten sections were examined. Sections were taken from various regions of the cortex, the corpus callosum, caudate and lenticular nuclei, internal capsules, thalami, pons and medulla. Three sets were prepared stained with hematoxylin and eosin, Weigert-Pal and Bielshowsky-Alzheimer-Mann methods.

The piarachnoid is thickened and pial vessels show perivascular small and large round cell infiltration. Pial layers are in places separated, and the reticulum is distended with red blood corpuscles, some mononuclear cells, and old disintegrated blood pigment.

Cerebral cortex shows in places diffuse mononuclear cell infiltration, with profuse red blood corpuscle extravasations. There is a definite diminution in the number of ganglion cells, and in fact a widespread loss of nerve tissue. Betz cells show chromatolysis and ganglion cells in general are shrunken, and in places pigmented. Some of the blood vessels contain structureless amyloid-like bodies.

The sections of nerve roots show an entire lack of perivascular lymphocytic infiltration, and there is no interstitial infiltration of the nerve fibers. The important changes here are characterized by hemorrhage, degeneration and disintegration of nerve tissue.

The most profound changes are seen in the internal capsule, the lenticular nuclei, and the medulla oblongata. Here can be seen small foci of hemorrhagic infiltration, some old and others more recent.

While some places are relatively acellular from atrophy of nerve fibers with fibrous replacement, others show neuroglial proliferation. Myelin sheaths show extensive degeneration and in places large columns of undulating lines, which correspond to glia fibers, are devoid of myelin covering. In some sections the tissue is edematous, and there are seen the large granular and even vacuolated cells, often referred to as gitter cells.

Ependymal cells show granular degeneration and in places pigmentation. Sub-ependymal tissue shows scattered mononuclear cells, and blood vessels exhibit perivascular small round cell infiltration.

The choroid plexus is hyperplastic and shows a large number of pinkish concentric lamellated bodies, not unlike those seen in the psammomata.

DISCUSSION

Dr. C. C. Wholey (Pittsburgh, Pa.): As Dr. Mayer has mentioned, irritative phenomena of the neuromuscular system are frequently encountered, especially in a neurological practice. Certain of the resulting abnormal muscular movements are spoken of as the dyskinesias. They usually are on the side of hyperactivity (and include various types of tremor, fibrillary contractions and muscular spasms) but the reverse may be true, as in periodic palsy, or myasthenia. Dr. Mayer's able review of the subject of myoclonus enables us to see that this phenomenon has been very baffling with regard, both to its cause and to the part of the nervous system which is chiefly affected in particular cases. This difficulty results in part, as the doctor has intimated, from the fact that a number of myoclonic-like conditions such as tics, torticollis, etc., seem to be definitely of hysteriform origin. The mental element is the chief and often the sole etiologic agent in such cases. I think, however, that when the rich material which has been afforded us through our recent experiences with epidemic (lethargic) encephalitis has been thoroughly digested, our ideas regarding typical myoclonic reactions will be further clarified. Lethargic encephalitis furnishes a most specific example of the fact that myoclonus may be produced by organic or toxic causes. Dr. Mayer has said that in encephalitic myclonus, both the cortical and spinal motor systems are affected and that this still leaves us in doubt as to whether the cortex or spinal system is mostly to be incriminated. While both the cortex and cord may be equally affected in the general minor tremors so conspicuous in certain cases, the massive myoclonic attacks affecting certain groups of muscles seem to me to point more definitely to a spinal cause. This is particularly true if we restrict the term myoclonus to its original definition as "movements of individual muscles or portions of muscles, which are arrhythmic, not controlled by the will, and which are frequently repeated and changing in their location."* G. Marinesco (footnote Rev. Neurol., Jan., 1921) reports several cases in which the rhythmic movements of the muscles were synchronous with the respiratory movements. He explains this as a reflex phenomenon connected with the respiratory centers, and says that they do not arise in the cord as do certain true myoclonias.

This view applies to a case of encephalitis which came into my hands where there were violent, rhythmically recurring contractions of the abdominal muscles, chiefly the recti. These spasms occurred first on one side, and then on the other, but were not simultaneous. An explanation for certain of the myoclonic reactions seems to me to rest on the supposition of a spasmodic contraction of the blood vessels in the cord supplying the nerves innervating these particular muscles. A similar etiology in intermittent claudication strongly suggests this hypothesis. Where myoclonus is caused by a definite infection, such as lethargic encephalitis, there would appear to be an irritative condition affecting the anterior spinal roots, and hence the motor system, in a way similar to a posterior radiculitis affecting the posterior root zone and giving such sensory crises as occur in tabes. These sensory crises have been thought to be due to angiospasm of the vessels of the posterior cord, and similarly such spasms may cause the severe clonic reactions so typically seen in encephalitis. Spinal epilepsy has likewise been considered due to spasm of the vessels of the cord.

The brilliant work of Ramsey Hunt which elucidated the pathology of paralysis agitans, chorea and the athetoses, has not only enabled us to understand this large section of the hyperkinesias, but has shed light upon the mechanisms and pathology of this entire group of muscular pathologies.

Dr. Theodore Diller (Pittsburgh, Pa.): I have listened with interest and have been instructed by this excellent presentation of a subject which some of you might at first glance suppose to have been a rare condition, but which like many other conditions is not so rare.

Our attention is directed to this interesting subject by the frequency of the appearance of this symptom in lethargic encephalitis. We have been indebted a great deal to Ramsay Hunt for his studies. Dr. Mayer

*Practical Med. Series, 1921, Nervous and Mental Diseases (Bassoe), page 51.

is indebted to him for his résumé, in bringing this subject before us in, I may say, a judicial fashion this morning, and it occurs to me that his position is correct in the light of our present knowledge that these things are not hysterical and they are organic. And yet my own impression is from my reading that while they are organic I believe that they may be in a chemical or nutritional sense. And I still believe that while not often hysterical in character, they may be so. I should like to ask Dr. Mayer whether he would rule hysteria out altogether. It occurs to me that there may be a likelihood of comparison between this condition and convulsions. Convulsions are due to organic diseases of various sorts. Convulsions may be due to organic disease; and convulsions may be, as we still know, functional in character.

DR. MAYER (in closing): My point of view is, that to call a symptom or syndrome hysterical, merely because we fail to find a physical basis for it, is a mistake. I tried to show how confusing this was with the hyperkineses. Hysteria ought to be a positive diagnosis; a psychic trauma, together with a distinct background of behavior and emotional anomalies, traced through the life history of the individual must be clearly in evidence.

As to myoclonia—there may be metabolic or chemical causes for such a picture. But such types are rare and their causative factors must be more plainly in evidence than they are to-day. The frequency of myoclonic attacks in the symptom-complex of encephalitis was the incentive to the citing of the case recorded in this paper, which shows myoclonic attacks together with a "sleep" of many weeks in paralytic dementia.

Dr. Wholey's conception is very original. Of course atheromatous or degenerative changes can be present like those which evoke intermittent claudication. There are many varying types of symptoms caused by the angioscleroses, but personally, I cannot include the myoclonia among them.

THE PRESENT STATUS OF ENDOCRINE THERAPY*

BENSON A. COHOE, M.D.
PITTSBURGH, PA.

Endocrinology as a special field of medicine has stimulated to an unusual degree the interest of a varied group of workers in the fundamental sciences as well as in the clinical branches. Each in his own special domain has been laboriously seeking for new light concerning the baffling problems of the internal secretions. In no other branch of medicine, perhaps, are so many lively polemics being waged to-day. We find the physiologists at odds among themselves with respect to the various hypotheses promulgated, and as a class, at times, pitted against the clinicians whom they accuse, frequently with right, of imaginative speculations and audacious therapeutic procedures. This state of affairs is due to the fact that no fixed principles have as yet been established concerning the physiology of the endocrine glands, and that almost any statement made to-day regarding their function may to-morrow require qualification.

The clinician in the midst of this chaotic state of our knowledge finds himself bewildered in any attempt to follow the scientific literature of the endocrines, or to formulate principles of therapy. Present day endocrine treatment has accordingly developed not by the extension of pure science to its application, but largely empirically by the method of trial and error. The result has been to divide clinicians, with respect to their attitude towards endocrinology, into three groups, the conservative, who endeavor patiently to follow the scientific advance, the ultra-conservative, who stand aloof or peradventure sit in the seat of the scoffer, and the ultra-enthusiasts who with boundless optimism have evolved a facile applied pseudo-endocrinology garnered largely from advertising pamphlets.

The fragmentary state of our knowledge of the incretions may be judged by the fact that after many years of painstaking investigation on the part of physiologists and biochemists only two hormones have been isolated—epinephrin and thyroxin, and at present some physiologists would deny the substantiation of epinephrin as a hormone. Despite the meagerness of established fundamentals the literature of clinical endocrinology has grown rife, and the phrase "endocrine imbalance" would appear to be superseding neurasthenia as a diagnostic blanket. Meanwhile the layman has been drawn from an intimate discussion of psycho-analysis to the more alluring topic of rejuvenation through the medium of the endocrines.

The obvious aim of any form of endocrine therapy should be to restore the patient with demonstrable endocrine dysfunction, as far as possible, to a state of normal functioning of the incretory glands. Theoretically this might be accomplished by decreasing, increasing or modifying the functional activity of these glands. In states of hyperfunctioning it would appear rational to attempt to decrease function by the excision of the hyperfunctioning gland, or by diminishing its blood supply by arterial ligation, or by radiotherapy, as has actually been accomplished in the case of the thyroid. In states of hypofunction it would be indicated to attempt to increase functional activity by transplantation of the homologous gland, or by means of a substitutive form of therapy through the administration of the gland extract or hormone. It is with the latter procedure that endocrine therapy is mainly concerned.

* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

One of the obstacles which has retarded the progress of a rational organotherapy has been the variability in the preparation of the gland products and the variability of dosage employed. There is an urgent need for standardization in the methods of manufacturing and of assaying the extracts as well as for a determination of a more exact or optimum dosage. A further factor which tends to hamper advance is the variability in the reaction of the patient himself to any given hormone. In the case of epinephrin, as Hoskins has pointed out, the vasomotor reactions are diametrically opposite, depending on initial blood-pressure, bodily vitality, temperature, dosage, reaction of the menstruum, and depth of anesthesia. With pituitrin administration, in the same individual, there is frequently a physiological response of opposite type, which may be due to "the condition of tone of the responsive mechanism at the moment of administration." Another difficulty lies in the fact that we have little or no knowledge of the fate of the gland extracts, or hormones, in the alimentary tract when administered by mouth, or of the extent to which they are absorbed. Plummer has shown that a failure of absorption or a destruction of thyroxin before reaching the general circulation is characteristic of a considerable percentage of patients. As Carlson has pointed out, endocrine therapy can have no effect in conditions due to dysfunction of ductless glands that function on the principle of detoxication, and in the case of the glands which furnish incretions such therapy may fail now and forever, as he states, (1) "if the hormones are not stored up in the gland; (2) if they are too unstable for the necessary chemical processes of isolation; or (3) if on oral administration they are destroyed in the process of digestion or absorption." Nevertheless, with a due consideration of these disconcerting possibilities, there is clearly no justification for therapeutic nihilism or pessimism concerning the future rôle of enodcrine therapy in medical practice. True it is that nothing has been attained up to the present time in states of hypofunction of the ductless glands comparable to the brilliant achievement of Horsley and Murray in the treatment of myxedema, and yet this one step forward in effective glandular therapy has justified all the labor spent in an effort to evolve a specific endocrine treatment in other conditions. Moreover, the use of endocrine substances for their nonspecific pharmacological action, such as epinephrin and pituitrin, has already proved a valuable therapeutic aid.

It would not be possible within the scope of the present paper to do more than to enumerate a few of the clinical conditions in which gland products have been employed with apparent benefit. As has been previously stated, the results of thyroid feeding in states of hypothyroidism stand out as the signal triumph of endocrine therapy. Perhaps the most significant advance of recent years in our knowledge of the function of the thyroid has been the isolation of its active principle, thyroxin, by Kendall in 1914. It has been demonstrated that thyroxin is a general body cell stimulant, and that it is present in a definite amount (on the average 14 mg.) in the tissues of the body; also that 14 mg. of thyroxin administered to a thyroidless person is not fully exhausted until the fifth to eighth week, and that a daily oral dose of 1.6 mg. will hold the basal metabolism of most thyroidless individuals within normal limits. According to Plummer the physiological reaction following the administration of thyroxin is identical with that following the administration of the fresh or dessiccated gland although absorption from the alimentary tract is extremely variable. The various clinical conditions in which the use of thyroid extract has been advocated are manifold, including myxedema, cretinism, obesity, chlorosis, enuresis, epilepsy, nephritis, eczema, hydrocephalus, toxemias, and even sterility. In treating patients with presumed thyroid deficiency we have in the basal metabolism rate a criterion for its administration, although recent investigations have shown that at least three other endocrine glands, the suprarenal, the anterior lobe of the pituitary and the gonads, may influence the rate of metabolism. A contraindication for the use of thyroid is obviously any evidence of hyperthyroidism. There is reason also for the belief that it may prove harmful if administered to patients with pulmonary tuberculosis, and Goodpasture has demonstrated that a heart stimulated to abnormal activity by thyroid products is more susceptible to injury from the poisons of acute infections and chloroform anesthesia than a normally acting heart.

Pituitary gland extracts employed in disorders of the gland have failed to yield the brilliant results of thyroid therapy in subthyroid states, although after removal of the anterior lobe injection of the anterior lobe extract will prolong life. Tethelin, the supposed active principle of the anterior lobe isolated by Robertson in 1916, which was heralded by the pharmaceutical houses as a product capable of accelerating the healing of wounds and of promoting convalescence, has recently been shown to be probably "a very impure mixture of substances of the lipoid class," and no adequate evidence has

been adduced for its use as a therapeutic agent. Extracts of the anterior lobe have been found to be variable in their action in one and the same individual. Pituitrin, the active principle of the posterior lobe, contains a pressor substance causing contraction of the smooth muscle fibers. In a specific way it has been used with benefit in diabetes insipidus where a pituitary disturbance has been assumed. Administered hypodermically it has been found to control the polydipsia and polyuria. Recently Stenström has cautioned against its indiscriminate use in this condition, due to the observation that it may cause a marked decrease in the excretion of sodium chloride in the urine. In a nonspecific way pituitrin has been used in obstetrical practice, shock, epilepsy, dementia praecox, impotence, baldness and many other conditions. At present the tendency is to limit its use in obstetrics with the ever increasing reports of rupture of the uterus and fetal death following its administration.

Our progress in the treatment of states of hypofunction of the suprarenal glands with suprarenal products has on the whole proven a disappointment. The hope placed in glandular therapy in Addison's disease has not been borne out in practice. In the alleged clinical condition of hypo-adrenia suprarenal extract or the active principle of the medulla, epinephrin, has been widely used, but the results are scarcely convincing. Since the cortex of the gland appears to be the part essential to life, administration of the whole gland extract would seem to be more rational than epinephrin treatment. Hoxie, after a study of the clinical results of suprarenal therapy in conditions of low blood-pressure, concluded that there was no good evidence of its possessing any significant superiority over other vasomotor stimulants of vegetable origin. Recently, with the viewpoint in mind of a possible relative functional insufficiency of the suprarenal cortex in exophthalmic goiter, Shapiro and Marine have administered fresh ox suprarenal gland cortex to patients with this disease and have reported a rapid gain in weight and muscular strength but without significant change in pulse rate or exophthalmos. Their results are suggestive and merit further investigation. Epinephrin, according to Elliott's law, produces the same physiological effect as stimulation of the sympathetic nerves. As a nonspecific drug it has proved useful in such conditions as asthma, shock, cardiac paralysis, angioneurotic edema, anaphylaxis, urticaria and other disorders.

No significant results have been attained clinically from the use of parathyroid gland extracts or by means of parathyroid gland transplantation in parathyroid tetany. The administration of calcium salts in tetany has proved more efficacious than the gland extract. The extract has been employed in paralysis agitans and other forms of muscular irritability without noteworthy effect.

We have as yet little knowledge of any internal secretion of the islets of Langerhans of the pancreas, but Banting and his associates have recently been attempting to procure an extract from this part of the gland free from pancreatic ferments and have found that the intravenous injection of this extract prepared from dog's pancreas, removed from seven to ten weeks after the ligation of the ducts, invariably exercised a reducing influence upon the percentage of blood and urinary sugar. Their clinical success in the treatment of diabetes by means of this extract is said to be promising and the reports of their further studies will be awaited with interest.

In the domain of the gonads, corpus luteum has been extensively used in such conditions as the vomiting of pregnancy, menstrual disorders, climacteric disturbances and in certain hypertensive states. The evidence regarding its efficacy has been conflicting but on the whole encouraging. With respect to testicular gland therapy it has not been demonstrated that its administration has delayed senility or in any manner proved an elixir of life to the degenerated man. The present trend among physiologists is not to regard the thymus as a gland of internal secretion and we have no certain knowledge of any internal secretion of the mammary gland. The pineal gland appears to be in some way essential to the growth and development of the growing child but it has not been demonstrated that feeding the gland extract to defective children has any therapeutic effect.

Polypharmacy in the form of pluriglandular mixtures has of late run riot. The promulgation of an alluring hypothesis of the selective capacity of the organism to pick out from the blood stream the hormones it requires and to discard the others, simultaneously with the flooding of the physician's mail with enticing literature extolling the therapeutic marvels of the endocrines on the part of some, fortunately not all, of the pharmaceutical companies, is in a large measure responsible for this deplorable state of affairs. Pluriglandular syndromes, even when most outspoken, are difficult to unravel. Indeed their variation may be almost infinite. Hoskins has calculated by a mathematical process that the varieties of such syndromes by virtue of the possible combinations

and permutations of hyperfunction, hypofunction and dysfunction of the various endocrine glands may exceed a total of ten millions! As yet we have but scant knowledge of the interrelations of the ductless glands, and uniglandular syndromes are probably rare. As far as can be proved, the selective hypothesis is a "figment of the imagination" while on the other hand it has been conclusively demonstrated that the body cells will take up epinephrin or thyroxin in lethal quantities when exposed to excess of these bodies. Happily for the patients the majority of these pluriglandular mixtures are inert when administered by mouth, except for the thyroid substance they may contain. While it may frequently be advisable after a careful study of the evidence of pluriglandular disturbance in a given patient to administer more than one gland substance, more frequently the rational course to pursue is to seek for the gland primarily at fault, as Biedl has stressed, and plan the treatment accordingly. Only by avoiding an indiscriminate and reckless form of pluriglandular therapy can the conscientious clinician hope to escape the odium that has in some quarters attached itself to glandular treatment and to prevent the legitimate field of endocrine therapy from falling into disrepute.

DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh, Pa.): I am glad that Dr. Cohoe mentioned the astonishing total number of possible glandular syndromes. Dr. Harrower is young yet but give him a little time and he will have the ten million possible combinations prepared and will send descriptions to your office with all necessary advice for their accurate and successful use.

In regard to the mass of facts which Dr. Cohoe has laid before us in this very interesting paper I can only touch a few of the high spots with which I may claim to be somewhat familiar.

Dr. Cohoe mentioned the variability of the glands; also the variability in the preparation of some of the most useful products. Take thyroid tablets, for instance. Burroughs, Wellcome & Company make tabloids and tablets of thyroid substance, while Parke, Davis & Company make tablets of thyroid extract. A grain of Parke, Davis's preparation is five times as strong as a grain of Burroughs, Wellcome's. Recently I prescribed one grain of the latter preparation for a woman. I cautioned her where she should get this prescription filled, but like many patients, male and female, that are rarely given to caution, she took it to her family pharmacist, who filled the prescription with Parke, Davis tablets, 15 to 25 times the strength called for in the prescription. I had cautioned her against the symptoms which might result from an excess of the drug but she paid no attention to this caution. As a result she showed a most beautiful picture of hyperthyroidism, when she finally returned to my office. There is need of standardization.

There are only a few of these preparations that have any demonstrated value therapeutically, and these few should be standardized.

Those of you who heard Marine's remarkable talk yesterday heard all that is really established as regards the thyroid gland and heard it from its source. He pointed out the great danger in the use of thyroid preparations of any kind by any patient until the susceptibility of that patient to the thyroid has been established.

Marine also pointed out—I do not blush to quote him because he knows all about thyroid and he will continue to learn—he pointed out the fact that the adrenals practically belong to the gonads embryologically, and he also pointed out the difference between the function of the cortex and of the medulla of the adrenals, the cortex controlling basal metabolism through the instrumentality of the thyroid. He has reported the application of this principle in the management of several cases of extreme emaciation due to hyperthyroidism. The cases referred to gained one pound a day for thirty days by the use, not of the medulla of the adrenals or of the whole glands, but by the use of the cortex. It has been demonstrated that if the cortex of experimental animals is damaged, the basal metabolism runs up rapidly and the animal loses weight. But if the thyroid gland is crippled before the cortex of the adrenal is destroyed or injured, the basal metabolism does not go up following the operation on the cortex. In other words, the cortex controls metabolism through its effect on the thyroid glands, and furthermore the epinephria seems to be elaborated in the medulla.

If you want to try this effect of adrenal cortex in suitable cases, get the glands, separate the cortex carefully from connective tissue and medulla and then feed the cortices raw or in a mixture of glycerine.

The pituitary gland has a definite therapeutic value for patients with hypopituitarism. A woman having a pituitary tumor may have very uncomfortable symptoms whenever she does not take a sufficient amount of the gland.

As to the recently discovered preparation of the hormone of the islands of Langerhans, it seems to be epoch-making. It does not pretend to be a cure for diabetes but gives promise of being a tremendous aid in the management of that interesting disease.

Just a word in closing. I should like to emphasize what I said yesterday of nutrition, which includes the study of the blood-glands, so-called. This is the live topic of modern medicine to-day. It is a subject in which the next few years are going to show some epoch-making discoveries. If I were a young man looking for a large field with the greatest promise of unequalled opportunities I would seek a fellowship under Marine in New York, and if a young man is bright enough he can get one—if he is bright enough and has the proper spirit of devotion and self-sacrifice.

Dr. A. C. Morgan (Philadelphia, Pa.): Endocrine therapy is a new thing and in our search for the welfare and benefit of our patients we are very eager to grasp at the latest theories and the latest introduction of the so-called therapeutic preparations, which are largely in the hands of the pharmaceutical houses. So we are unconsciously victims of pernicious advertisement. Dr. Cohoe mentioned the "harrowing details" of the annoyance we are subjected to by postal card advertisements coming to us from the far West. Of course it is perfectly proper for the youthful West to try to educate the effete East. And we are swallowing

it—everything. I know a man who preserves the cards and books that come from California and who is taking them as law and gospel. I think that in a little while our eyes will be opened.

I want to serve the interest of my patients in regard to honest preparations. Hold fast to that which you know is true. Do not adopt the latest thing that comes to you by mail. Study a few preparations well. I would rather study a few extracts thoroughly and well than indulge in the pluriglandular theory. Because we know our real application of thyroid, of pituitrin, of adrenals, then we can defer the application of the other glands until their status has been established. The use of the three substances mentioned and their derivatives has reached a clarified state so that we are able to prescribe them and use them with the hope of securing beneficial results. But all this is predicated upon one fact—the capability of the patient's body to react to any medication that is given.

The other kind, supposed to advertise the fountain of life, will go into the discard when the rich man has been separated from his money. "A fool and his money are soon parted." The sooner these things are known, the better.

Dr. Braisted recently became head of the Philadelphia College of Pharmacy and Science. He has large plans in view that are already started for the foundation. He is going to make preparations for a large laboratory of original research in the hands and under the direction of men having one purpose in mind, that of the relief of suffering humanity, and not the exploitation of the educated dollar. Many of the pharmaceutical houses are good, some are better, and a few are best. Some are blank.....

With regard to the thyroid preparations, we all know why the iodids were largely used in years past. Simply from our empirical knowledge that the iodids were used so largely in former years because of their stimulation of the thyroids. We are now better able to use the thyroid preparations and get better results from the use of them, first, in the benefit to the patient with the better preparation, and second, better action upon the stomach. So many turned from the iodids because of their upsetting the stomach—and then the iodid rash was not very pleasant. We have made advances along that line.

We would commend, therefore, reading, reflecting upon, and unweariedly digesting all that comes to you, but always have the salt shaker near by.

DR. COHOE (in closing): In closing I wish only to emphasize the remarks of Doctors Litchfield and Morgan with respect to the variability of the endocrine products. As has been stated there is an urgent need for standardization of the commercial products and for a determination of the optimum dosage. For example, the action of thyroid extract is uncertain, not only by reason of our lack of information as to the proper dosage to employ but also by virtue of our inability to predict the physiological response of the individual patient to the drug. Plummer found that one of his patients could take as much as 250 grains of thyroid extract in twenty-four hours without any reaction simply because it was not absorbed from the stomach. Even if we succeed in standardizing the preparations we yet must consider the responsivity of the patient to the particular endocrine product.

If we systematically analyze the end results of glandular therapy in the various endocrinopathies, recording alike failure and success, it is quite probable we shall note failure more frequently than success, but only in this manner can we arrive at a precise evaluation of endocrine therapy and determine its proper rôle in our therapeutic armamentarium.

HEALTH AND NUTRITION WORK AMONG PRE-SCHOOL AGE CHILDREN*

EMILY P. BACON, M.D.
PHILADELPHIA, PA.

Within the last decade the value and possibilities of nutrition classes have been demonstrated without question. It is now the obligation of an agency which comes in contact with the greatest number of children to get the health program over to them and their families in much the same manner that the nutrition class has done to isolated groups. The public school seems to be the agency best equipped for doing this, and in some cities and towns is already accepting the challenge of the nutrition class by organizing health education programs.

But is the school at present organized to meet the needs of children between the ages of two and six? A recent demonstration made by several coöperating agencies in New York City has shown that the school system with little reorganization has resources for reaching the child of five, but his brothers of two, three and usually four, are still excluded from any health program. Probably the public school is the agency which will eventually be able to get the subject over to the pre-school child; but at present there is no one agency prepared to do it.

It is the aim of this paper to describe briefly some of the work that is being done along these lines and to suggest to those interested in the welfare of young children that an effective health program is certainly being worked out for them.

In 1918 England and Scotland had already, through child welfare acts, provided for the care of children under five, and for instruction of their mothers concerning them. In this country during Children's Year, two million children under seven were measured, and their measurements strongly impressed those engaged in the work with the necessity of more thorough supervision of such children. Infant welfare associations of city and county have been extending the scope of their work to include care of this group; and child health organizations, in addition to the excellent work that they have already accomplished with school children, have been creating health methods for children of the pre-school period. New York, Iowa City, Washington,

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Boston and Chicago are some of the cities which have given reports of careful, scientific studies made on this group; and while it is not within the scope of this paper to discuss in detail these various studies, at least the important conclusions may be presented.

STANDARDS

What present standards of nutritional well-being can best serve in this work? Most of the studies along this line have been done on school children; but even so they are helpful in connection with pre-school age work because attention is directed to various methods of measuring which may also be applied to this younger group, and to such measurements as may best symbolize a well nourished and properly developed body. For instance, Gray, Dreyer, and Hanson suggest the possible superiority of the value of stem height to height measurements as the standard for stature. Also Gray states that the most valuable single measurement of the body is that of chest-girth and shows figures to prove his statement. The interesting work done in San Francisco in which Pirquet's nutritional index "Pelidisi" was used, suggests that this system should be given a more thorough trial on pre-school age children.

Further studies on school children have established facts which are also applicable to the younger group: for instance, that there is a varying increase in weight and height dependent upon season, the practical importance of which becomes significant when comparing the slight increase in measurements of children during spring months with the greater increase in the fall. Another established fact is that there is a normal variability of stature characteristic of race and stock, which necessitates the making of standards for many various groups.

The most valuable contributions to pre-school age standards have been made by Holt, Baldwin and Woodbury, and their tables, which include weight and height for age are all in use. Woodbury's standards published by the Federal Children's Bureau or Baldwin's as found in his book, "Physical Growth of Children," are the best for general pre-school age use at present. The former were formulated after a thorough examination of the measurements of two million children under seven and the elimination of all measurements which had any suggestion of inaccuracy. The children were measured stripped; they were free from disease and defects, and their measurements were done under the supervision of a doctor. One just criticism of these standards is that they include measurements of children of various nationalities, and therefore are not an average of any one racial type.

All of these studies are undoubtedly valuable, but have resulted in a rather complicated series of tables which have caused considerable confusion in the minds of those doing practical work with children. On account of this confusion, a national committee composed of eminent men representing institutions interested in child welfare and in anthropometric measurements has been organized, and is carefully considering current standards of nutrition in order to systematize them. Once the standard is decided upon, workers will be encouraged to measure various groups of pre-school age children according to the manner suggested by the committee.

For the present, as stated, Woodbury's or Baldwin's tables offer standards which may well be used for this age. It should be emphasized however that measurements are only one index of the child's nutrition, and that of equal value are such physical findings as the sparkle of his eye, the color of his mucous membranes, the texture of his skin, his alert attitude, and his posture.

METHODS

As for methods for conducting pre-school age work, they are also in the making. Questions still asked are, "If children are grouped in a nutrition class, is there not a tendency to neglect them as individuals?" and, "Is not group work superfluous if every child is handled as an individual?" It is unquestionable that every child should be studied as an individual but by bringing children in contact with others of the same age, experience shows that their interest in things relating to health is more easily aroused. An example may be cited.

A child entering the class is examined by the doctor. The mother and doctor then talk over the child's condition and discuss plans for helping the child to improve. "But, doctor," says the mother, "my boy won't drink milk." The four-year-old listens with an attentive ear. The doctor catches his eye and says, "He looks like the kind of a boy that will grow strong fast, for he looks as though he could keep up in the races with the other children. There is the milk race; it is a race that means every child in it shall drink slowly three cups of milk daily. The people who win out get a big silver star on their paper milk bottles at the next class. The other boys are beginning to do awfully well." Note that the doctor talks in positive and not negative terms; also that he says "may" instead of "must."

The child leaves the doctor and goes to the class with the other children. There he sees pictures of big white milk bottles; he sees boys get big silver stars on their own paper milk bottles. He hears the lady say, "I love milk, too, and I

drink three cups very slowly every day." Then the children sit around a low table and each gets a small cup of milk, perhaps a straw, and perhaps a crisp graham cracker. The other boys and girls take all of their milk, so do the mothers, and it does taste pretty good; he decides he had better do as the boys do and just as well as they do.

What is happening? Health education is becoming a practical, first-hand experience, and not merely a lecture; there is a big chance that this little milk party may be the foundation of a milk-drinking habit formed unconsciously. The group method appeals to certain "social and psychological tendencies latent in every child: the desire to do what his fellows do, and to do fully as well as they."

Granted, then, that in addition to handling each child of this age as an individual, the group method also should be used in the health program, the questions come up, "Where shall the class be conducted, and what personnel and equipment are necessary?"

Children's health centers, dispensaries, public and private kindergartens, and day nurseries are often well fitted for work of this kind; the disadvantage of the nursery being that the mother is not present.

STAFF

Personnel must include the doctor and a trained worker who is present during the class and who does the follow-up work in the homes. Either a trained dietitian or nurse can do this work effectively if she has vision enough to appreciate its broad scope and therefore to study along lines of the work in which she is least informed; and if she is sufficiently patient so that she does not early get discouraged when people do not seem eager for the new methods she is urging upon them.

What of the doctor? Upon him depends much of the success of the class. The mothers will accept his advice providing their children like him; the children will like him if he understands child psychology and applies his knowledge carefully. He must be patient, gentle, friendly, able to tell an appropriate story, careful that he does not make the health game too much of a burden. In no other manner will he be able to win the child's confidence and do a satisfactory physical examination. If this is done without opposition, the child will be glad to see the doctor from week to week, and will work to win a word of praise from him.

In addition to the doctor and his assistant, it is quite ideal if the services of a dentist and oral hygienist can be obtained. A coöperating nose, throat and ear clinic, a neuropsychiatric clinic, and laboratory facilities are essential. Much stress has properly been placed upon the importance of correcting physical defects in undernourished children; fully as much should be placed upon the importance of correcting behavior defects. Stool examinations should be done routinely so that children suffering from intestinal parasites and starch and fat indigestion may be treated and dieted appropriately.

NUTRITION WORK AT STARR CENTER

At the Starr Center Dispensary in Philadelphia, work of the sort described is done and it may be worth while to say a few words concerning it.

The aim of the class is to teach habits of health and hygiene, to protect the children by vaccination and administration of toxin-antitoxin, to detect early evidences of disease, and to correct defects.

The class meets once a week for four months. It is limited to eight children, because experience has taught that eight pre-school age children with eight mothers and perhaps eight babies is the largest number that can be handled effectively in this intensive work, particularly since most of the children are of foreign (Italian) parentage. The number is small but certainly the subject matter is drilled into their minds, and they carry the news to other families. The staff consists of a doctor, a nurse trained in social work, and a cooking demonstrator. A dentist comes to the dispensary twice weekly.

Careful histories are taken and physicals are done when the children are admitted to the class. Each mother and child is seen individually by the doctor every week and reëxaminations are done when indicated. The Woodbury measurements are used as the standard.

After being measured and examined, the children are assembled in the classroom where those who have earned them receive the much coveted stars. Each child helps to put his star on his weight chart which gives him quite a feeling of ownership. Stars are given for gain in weight, regular rest periods, correction of physical defects, and drinking three cups of milk daily. If a child fails to earn a star, an effort is made to discover the reason but care is taken not to emphasize the failure too strongly in class. In fact, if the child is downcast about it, the class leader quickly discovers some way in which the child has done well during the week, and mentions it.

Then comes the lesson. The success of this depends largely upon its simplicity. Several posters representing one health subject are hung on the wall; or, if for instance, the subject is "Vegetables," one of each of the desirable vege-

tables in season is brought to the class, and the children learn to name them and then to pick them out on the vegetable posters. Meanwhile the single point made is that at least one of these delicious vegetables is to be eaten daily by every growing boy and girl and every big man and woman. The "whys and wherefores" of the desirability of eating them mean nothing to a child of three, but they should be explained to his mother.

Following this and after "washing hands before we eat," the children sit down to the table where perhaps a little spinach is served, the cooking of which has been demonstrated to the mothers. These foods so often refused or, as the mothers say "gagged" at home, are eaten with apparent relish in the group.

What are our results? There are some failures, and, based on weekly gain in weight alone, results are not striking during the class period; but measurements taken six months to one year after graduation show that the majority of children have made more than the average gain. Also health habits, such as the elimination of coffee and tea from the diet, drinking of milk, eating of greens, proper care of teeth, going to bed earlier, acquired by children in our first class, have in the majority of instances, become involuntarily a part of their daily routine. In addition, those children who were extremely bashful or unruly on admission to the class have invariably adapted themselves to the class environment before the end of the session.

The effect of the class on the mothers has been that they have shown unusual coöperation in having children vaccinated, treated with toxin-antitoxin, in having physical defects corrected, and in allowing certain children whose inability to gain could not be explained by the doctor in charge, to go to the hospital for study. Usually the mother, proud of her child's standing among his fellows, is convinced that much of what she has learned in the class is worth while, and she continues to practice it in the home.

CONCLUSIONS

1. The Woodbury or Baldwin tables are at present the best indices of nutrition for children between two and six. Ideal standards must be established. Once these are decided upon, measurements of various groups of children must be made according to standard regulations.

2. The class method combined with personal interviews with those in the class gives encouraging results with children of pre-school age.

3. The success of a class depends largely upon the ability and ingenuity of the doctor and his assistants.

4. Evidences of value of nutrition work among pre-school age children are shown by:

(a) Formation of health habits which stand the test of time.

(b) Signs of physical improvement such as correction of defects; improvement in heart action, correction of constipation, gain in weight and height, and decreased tendency to illness.

(c) Definite tendency on the part of the child to adapt himself to a social and hygienic environment.

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DISCUSSION

DR. WILLIAM N. BRADLEY (Philadelphia, Pa.): I feel that Dr. Bacon has presented a very comprehensive paper and has covered the subject very thoroughly and completely. Unless you have seen this work actually being done, it is hard really to appreciate the importance of what she gives as her third conclusion, the personality of the staff, and in my judgment that counts for most all of the success. Dr. Bacon's work has been particularly difficult, owing to the fact that she is working in a very large measure with a foreign-born population. This is quite difficult because of their customs and superstitions; also because much that she teaches must be conveyed through an interpreter. We find it particularly difficult to get the mothers who have been born in Italy (and ninety-five per cent of the work is among Italians), to change their customs, I think very largely because we do not speak their language fluently. They do not grasp what it is we are trying to do for them. They have not become acquainted with American customs, and they cannot understand this so-called philanthropy, if you will, which wants to give them a better child and to improve their living conditions; they are not accustomed to that sort of thing.

I should like to emphasize the importance of special class instruction. Only in this way can the best results be attained and records show the value of the work.

As far as work among the foreign-born is concerned, I believe that our efforts must be concentrated on getting the message across to the rising generation.

Organizations doing nutrition work should employ a worker who not only goes into the individual homes and instructs in the use of the appropriate foods, but she should also (if permitted) help with the family budget. It is very necessary for the worker to be familiar with the food habits of the people with whom she is dealing, whether they are Italian, Jewish or Negro.

As to the family budget, these people know almost nothing about American foods and the best foods, and

they must be instructed; so I think it is just as important to try and instruct them in the foods to buy and how to buy. Such a worker is invaluable. Nutrition workers who specialize in diet will be able to make the family pocketbook fit the dietary and a proper dietary at that.

Dr. Bacon has mentioned the rôle of the school authorities in the matter of the pre-school child. It would seem to me that the time has come when the Board of Education, in line with its policy of public education, should employ inspectors to visit every home, and, finding there a child of five years, insist that the child be taken for a complete physical examination and mental test. This should be recorded in a proper blank which the child could present when admitted to school. In addition, there should be a vaccination against smallpox and immunization against diphtheria, if needed, and advice given as regards tonsils and adenoids, eyes, and needed dental work done. This would be a tremendous saving in school time to the child and annoyance to the school authorities. Why should it not be so? The state is spending millions to educate her children, and if all these things must be discovered by the school physician and time taken from school hours for their correction, it means an aggregate of thousands of hours in instruction lost to these children. The mental test would be of paramount importance in placing the child in an appropriate grade. Many are taken to school and no fault in mentality noted. They are dragged along a grade or two or three, and then the parents decide the child is not up to standard; he is taken to a hospital and finally lands in a feeble-minded institution. This should all be done before the child is entered in school.

I should like to quote just a few figures from a recent report of the work done in New York schools. Of 1,061 children examined for admission to school, 66.7 per cent showed physical defects, 72.6 per cent had defective teeth, 19.2 per cent were undernourished; approximately 25 per cent of kindergarten children are below the four-year level in intelligence, and 30 per cent of the first grade are below the fifth-year level or 10 per cent below standard.

Special study should be made to determine special abilities or aptitudes or special disabilities. The curriculum should be revised for those more bright, with proper training for those less bright.

Dr. John F. Sinclair (Philadelphia, Pa.): I cannot add anything to Dr. Bacon's very complete paper, but I do want to stress what she naturally was a little reticent about stressing forcibly, and that is the all-importance of having the right kind of a physician in charge of this nutrition clinic work. Dr. Bacon spoke of it, but as she is the physician there, she naturally did not stress that as I feel that it must be stressed. It is, to my mind, all-important that this class work, this nutrition work, shall be properly supervised medically, and I do not think that we can make that point too strong.

At the Babies' Hospital in Philadelphia, every case that comes to the hospital is admitted at once to the out-patient department and the medical service and gets a complete physical examination. After that the patient is referred to such special services as may be necessary. I might say that we take into the out-patient department children up to six years of age; in the hospital those up to three, but all children from two to six are routinely sent to the dental hygienist for an examination to complete the physical examination made by the medical doctor. And, of course, if they then have to go to the dentist, they are so referred. If there is nose and throat work to be done they are referred to that special department. But the point I want to make, is that these are medical cases from the beginning and are always under the supervision of the medical staff, and this is, I believe, a great help in properly supervising the nutrition work.

We have a very efficient worker in the nutrition field working for us, and she has done what Dr. Bradley has drawn attention to; she has helped materially to supervise the budgets of the family and to show them how they can make their money go to the farthest possible point; and I think that is a very important side of it.

Another point that Dr. Bradley brought out was the point in regard to speaking the language of the people. That is a very important point. We are fortunate in that we have a Polish doctor who is able to talk with them in their own language, and that aids very materially in getting to the bottom in these cases.

Dr. C. H. Witmer (Lancaster, Pa.): There is one point I should like to stress in this admirable paper of Dr. Bacon's: Looking at the question from the standpoint of the school physician, one sees these children who have been undernourished come to the schools and he finds a great number of physical defects. There is one plea I should like to make to all physicians within my hearing, and that is that we impress upon the family physician the importance of the child between the ages of two and six, when that child enters school. I feel that we do not appreciate that important period in the life of the child. If there is any one period in his life when he is neglected it is some time between these ages.

Those figures that Dr. Bradley quoted, showing the great number of physical defects, are borne out here in our rural sections in Pennsylvania. We see that, year after year, and the difficult part of this whole subject, to my mind, is in having the family physician realize the importance of this work before that child gets into the school. I believe all of us can preach this gospel if we take the opportunity.

Dr. John D. Donnelly (Harrisburg, Pa.): I have listened so attentively to Dr. Bacon that I feel almost as though I could recite her paper. Her work is admirable.

I want to call attention to a point that is overlooked by a great many nutritional workers. They set a scale up on the wall for age and height and weight. The Americans are not a race. They do not take into account what Dr. Bacon brings out; they make no allowance for stock and race. There may be a little Italian boy who is short but has normal weight for his height, but few consider what height the Italian boy should be for that age, the little fellow may be stunted even for an Italian. Many factors might cause this and the little youngster goes on neglected.

The problem is distinctly a medical one, and I feel it should be under the direct supervision of the doctor. One cannot hold the attention of young children for any length of time. They have to be captured. Naturally, the psychological factor is an important one. To get results, as much trouble, care and effort must be spent on the mother as on the child. After an examination has been made the mother must be impressed with the necessity of following out the doctor's instructions, which should be given in detail, and told how to overcome the child's disinclination to do as directed; how, for instance, to put him to bed at a certain hour; how to get the child to eat the right

food, etc. The mother has probably tried her best but failed, and the doctor once more has to take the necessary time to explain various methods by which the individual child's confidence may be gained and his coöperation secured.

The nutritional worker can get the mother's confidence and do just as good work along these lines. But there are other things about which the nutritional worker cannot tell that mother; for instance, the question of bed-wetting. As we know, many children are bed-wetters because of lack of control. The doctor can impress that point on the mother. We recently saw about fifteen or sixteen youngsters, school children, who were bed-wetters. We examined them thoroughly and could find no reason why they could not control their sphincters. We taught them to train themselves, with the result that after a month's effort, we were able to cure most of them, the others being markedly improved. There are many similar faults which can be corrected and I feel that in his work the doctor should pay particular attention to such details.

Dr. Bacon (in closing): I certainly agree with Dr. Sinclair that one of the most important phases of the nutrition work is the medical supervision of the child. If there were time it would be interesting to go more into the details of this end of the work, because certainly if a doctor is not interested in and does not know all about the physical and mental condition of the child, the best advice cannot be given to his mother.

The importance of the mother's understanding what the doctor is saying of course is very evident. No group that is doing this type of work with foreign-speaking people should attempt to do it without an interpreter to interpret what the doctor is saying to the mother.

I was very glad that Dr. Donnelly emphasized again the fact that there is a definite variation in measurements according to race and stock. This is a most important fact to consider. I also was glad to hear him state his methods of attracting the attention of the mother and getting her coöperation.

In regard to the mental hygiene of these children, I should simply like to suggest to the members of the Society that the Bureau of Educational Experiments in New York City has done a work which has recently been published in their book called "Health Education and the Nutrition Class." This book is rather technical but yet not so technical that every one of us cannot get a great deal out of it. It certainly is the most honest and accurate expression of results of work done along this line that I have read.

SELECTIONS

THE SIGNIFICANCE OF BLOODY AND YELLOW SPINAL FLUID

CHAUNCEY L. PALMER, M.D.

PITTSBURGH

During the past ten years lumbar puncture with the biological, chemical and bacteriological examination of the spinal fluid has been used quite extensively in all branches of medicine and surgery as a diagnostic, prognostic, and therapeutic measure.

With the increasing use of the various examinations of the spinal fluid, rather definite microscopic and chemical findings have come which lend aid in a great many cases. Out of these findings have come certain ones which are characteristic. Among these are the bloody and yellow spinal fluid.

The bloody spinal fluid referred to is not the unevenly distributed, blood-streaked spinal fluid of contamination, but the evenly mixed bloody spinal fluid of diseased conditions. Nor will the bloody spinal fluid of traumatic conditions be referred to, except to say that the surgeon should not depend absolutely on bloody spinal fluid as a diagnostic sign of injury, because the patient may have some disease condition which could cause it irrespective of injury.

In the American Journal of Medical Science for April, 1920, Nammack describes the true syndrome of Froin as consisting of: (1) A spinal fluid which coagulates at once or upon standing, the consistency of the clot varying, but often being so tenacious as to permit one to invert the tube; (2) a yellow coloration or xanthochromia; (3) a marked increase in cells and albumin. All who have studied this condition are agreed that the coloration is due to presence of pigment, chiefly bilirubin, and the increased coagulability to an increase of fibrinogen.

He states that in 96 cases the complete syndrome occurred in only six. It appears that the true syndrome of Froin represents the later development of a process, of which the yellow coloration alone represents an early stage. Of the six cases that presented the complete syndrome, two were meningeal hemorrhages, two were cases of tuberculous meningitis, and two were cases of poliomyelitis. In 5,801 spinal fluids, yellow fluid was observed in 1.6%.

His conclusions are: (1) Yellow spinal fluid occurs in a wide range of diseases of the spinal cord and meninges. (2) The complete syndrome of Froin is rare. In acute and subacute conditions the presence of yellow fluid suggests the probable diagnosis of tubercular meningitis or poliomyelitis.

The following case reports bear on this subject:

Case 1.—J. A., aged 32. Family history negative. His history included malaria, and convulsions at various times throughout life which were diagnosed as epilepsy. Patient became unconscious about May 10, 1920. Admitted to the hospital on the 13th day of May. Patient was a well developed, well nourished, adult, male negro. He was in coma. Physical examination showed a scar on the left eye. There were a few moist râles scattered throughout the chest, especially marked in lower lobes at the posterior. His abdomen was rigid and scaphoid. He had general convulsions at irregular intervals. His temperature ranged from 100°F to 104°F during the first few days in the hos-

pital. His blood-pressure was 150 systolic and 65 diastolic. His respiration was 28 to 32 on admission, rising to 40 and reaching 48 after the second day, then returning to 20 to 24 on the fourth day. His pulse ranged from 96 to 146 during the period. He also had cervical rigidity, some stupor and convulsions. His blood count showed 19,600 WBC with 90% Polys. Urinalysis was negative; blood culture and Wassermann tests were both negative.

During the first four days in the hospital three spinal punctures were made. The first one was practically normal, including Wassermann and colloidal gold. The second one showed an evenly distributed bloody fluid, with a plus globulin, but normal colloidal gold and sterile culture. The third spinal fluid presented the same findings as the second. On the fifth day of his illness the temperature settled down to normal and the patient made a complete recovery. A diagnosis at the time of hemorrhagic meningitis of undetermined cause was made in the case.

Case 2.—F. D., colored, adult, male, aged 24, admitted to the hospital October 26, 1920. His temperature, pulse and respiration were practically normal. His blood-pressure was 125 systolic and 85 diastolic. Patient fell over while at work and remained unconscious while in the hospital. His blood count was negative; urinalysis showed a heavy precipitate of albumin. Spinal fluid was bloody. The blood was finely diffused throughout the fluid. After centrifugalization the supernatant fluid was distinctly yellow. Globulin in the supernatant fluid was very strongly positive. The colloidal gold test was 2555543100 (luetic) and the Wassermann test was two plus.

Patient died on the third day after his admission to the hospital. No postmortem. A diagnosis of general visceral syphilis with hemorrhage into the cerebral ventricle was made.

Case 3.—E. E., aged 44, gave a history of ear trouble. He was admitted to the hospital December 6, 1920. His blood showed 24,000 WBC, of which 80% were polynuclear neutrophils. His urine showed a heavy precipitate of albumin, with fine and coarsely granular casts. His blood Wassermann was anticomplimentary. His spinal fluid was gray-yellow in color, four plus globulin. A cell count of 3,498 in which 98% were polynuclear neutrophils. The colloidal gold was .0123542100, which is a meningitis curve. The spinal fluid Wassermann was negative. Direct smears from the sediment revealed innumerable Gram-positive diplococci of the biscuit variety, probably pneumococci. Culture revealed positive pneumococci. Patient died within twenty-four hours after his admission to the hospital. This case was definitely one of acute pneumococcic meningitis. No postmortem.

Case 4.—Baby J., born December 11, 1919. On 21st this infant developed a high temperature and evidence of meningeal irritation. On December 25, 1919, the spinal fluid showed a peculiar yellow color, was cloudy, showed a four plus globulin and a cell count of 1512. Smears from the sediment showed innumerable Gram-positive cocci, arranged in chains, positive for streptococcic meningitis. Patient died. No postmortem.

Case 5.—V. R., female, aged 2 1/2 years, Italian, showed clinical signs of meningitis. Spinal fluid was bloody with four plus globulin and cell count of 3,000. Bacteriological examination showed innumerable Gram-positive cocci in pairs and in short chains, both intra- and extracellular. The patient's parents signed a release from the hospital, and left, taking the child with them. Therefore the outcome is not known.

Case 6.—M. P., adult, female, aged 36, developed in the sixth week of a continued fever, evidence of meningitis. Her spinal fluid was yellow, showed 12 cells and globulin. Diagnosis: typhoid fever with encephalitis. Patient died. No postmortem.

Both the bloody and yellow spinal fluid occurred in a great variety of conditions in practically all ages. All the cases of bloody spinal fluid showed a supernatant fluid which was yellow after centrifugalization.

From a careful study of the first case it is very probable that it was one of bronchopneumonia, complicating epilepsy, and the bloody spinal fluid was a coincidence. Bloody spinal fluid is probably due to: Conditions within the blood, such as purpura or any condition which reduces the coagulating power of the blood; blood vessel changes, due to various toxemias and infections; also various mechanical factors causing stagnation and varicosities of the veins (such as spinal tumors, curvature, etc.).

CONCLUSIONS

Both bloody and yellow spinal fluid are not extremely rare. The yellow color in spinal fluid is probably due to pigments derived from blood which is the result of slight previous hemorrhage. Inasmuch as yellow bloody spinal fluids occur in a great many instances, either or both may exist before the disease has developed noticeably.

Careful search should be made by spinal fluid and blood examinations, particularly the coagulation time, also examination of the retina for evidence of sclerotic vessels, in order to determine the possibility of recognizing the existence of early underlying conditions which may cause yellow spinal fluid previous to the development of the present condition, and which may have nothing to do with the disease from which the patient is suffering at the present time.

308 Diamond Bank Bldg.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

OUR PRESENT KNOWLEDGE OF THE ETIOLOGICAL FACTORS IN EPIDEMIC INFLUENZA

DR. SAMUEL R. HAYTHORN

The etiological factor in epidemic influenza is still uncertain. That influenza is an acute communicable disease, transmitted directly from person to person through contact, can scarcely be disputed. Attempts to demonstrate the cause have been made along two lines, namely, to prove

that the disease is due to the Pfeiffer bacillus, and to show that a filtrable virus is responsible for the first symptoms and that the Pfeiffer bacillus is present in the rôle of a secondary invader.

In 1892 Pfeiffer described a very small Gram negative bacillus which he isolated from the sputum of typical cases of influenza but which he failed to find in normal controls. Enormous amounts of work have been done to try to determine either that the B. influenzæ is the etiological factor in the disease or to rule it out altogether. Neither of these objects has been accomplished up to the present time. In favor of the Pfeiffer bacillus as the cause we have its indisputable pathogenicity in sporadic cases of influenzal meningitis, chiefly seen in children; its almost constant presence in cases of epidemic influenza, particularly when complicated by pneumonia; its comparatively rare occurrence in normal individuals; and the recent demonstration by Parker that early cultures of B. Pfeiffer, under twenty-four hours, are extremely toxic while those over thirty-six hours have lost their toxic qualities. Against the Pfeiffer bacillus as the cause, we have the failure to find it in many instances which are clinically epidemic influenza, particularly when not complicated by pneumonia; the occurrence of the bacilli at other times than epidemics in sinus disease, chronic lung infections and rarely in normal carriers; the failures of vaccines prepared from the organism to protect against the disease, and finally the utter failures of Rosenau, and of McCoy and Richey to produce the disease in relatively large groups of presumably susceptible persons, by inoculations with cultures of the organism.

Eventually, it will probably be shown that the Pfeiffer bacillus is an organism which, if not the real cause of epidemic influenza, has an especial affinity for symbiotic growth with the real cause.

The more recent efforts to determine the cause of epidemic influenza have been along the lines of a filtrable virus. In 1918 Nicolle and Lebailly reported a series of experiments in which monkeys, inoculated with filtered blood, and nasal secretions from uncomplicated grippe cases, developed symptoms similar to mild forms of epidemic influenza. In 1915 Foster had obtained similar results with filtrates from common colds. Many series of experiments have been made along these lines but without uniformity of results. In April, 1920, the regular program of the Saturday afternoon session of the annual meeting of the American Association of Pathologists and Bacteriologists, which was being held in New York, was interrupted for about an hour while Olitzky and Gates of the Rockefeller Institute presented experimental results which they had obtained in animals inoculated with filtered nasal secretions from early uncomplicated cases of influenza. The lesions demonstrated were suggestive but not altogether convincing. In 1921 they reported that they had grown minute, strictly anaërobic bacilloid bodies from their virus, and that pure cultures of these bodies produced the lesions. The virus resists 50 per cent glycerol for several months and has been named the Bacterium Pneumosintes, meaning lung "injurer" or "devastator."

The work of Olitzky and Gates has not, as yet, received sufficient confirmation. Gordon reported an experience similar to theirs in London in the early months of 1922, and Lister in South Africa, who had formerly reported in favor of the Pfeiffer bacillus, has recently stated that he has satisfied himself of the presence of an anaërobic filter-passing organism similar to that found by Olitzky and Gates.

A DISTURBANCE OF THE ISOHEMAGGLUTININS IN THE BLOOD OF THREE FATAL CASES OF BACTEREMIAS

DR. G. R. LACEY

Prior to 1900, it was supposed that biologically all human bloods were similar. From 1900 to 1906 Landsteiner and Shattock found that by separating the serum from the cells of a large number of patients, and by testing the serum of each against the cells of the others, the resulting reactions showed these bloods to belong to three distinct groups. The result of the mixture of the serum of one patient and cells of another was determined by the presence or the absence of an agglutination of the cells. They advanced the thory that the agglutination reaction was due to two factors, one of which was present in the serum and the other in the cells. The factor present in the serum was designated as agglutinin and that in the cells as agglutinogen. When a serum containing a given agglutinin was added to cells containing its corresponding agglutiogen there was always a resulting agglutination of the cells. Therefore, theoretically, the two could never be present in the same serum. On this basis these authors found the bloods they examined to fall into three groups.

Jansky in 1907, and Moss in 1910, working independently, found that there was still another group of patients whose bloods had not been described in the foregoing table. This group was one whose cells were agglutinated by the sera of all the other groups but whose sera failed to

agglutinate the cells of either of the three previously described groups.

A somewhat confusing point has arisen in the two classifications as set forth by Jansky and Moss in that the numbering of the groups by Moss is opposite to that of Jansky. The groups I and IV of the Jansky are transposed in the Moss. However, the groups II and III are the same in the two classifications, so that for statistical purposes, one can rearrange the figures in any report to conform to the one used by him if the method used has been designated.

For comparison of the two methods the schematic diagrams are as follows:

JANSKY CLASSIFICATION

Cells \ Sera	I	II	III	IV
I	—	—	—	—
II	+	—	+	—
III	+	+	—	—
IV	+	+	+	—

MOSS CLASSIFICATION

Cells \ Sera	I	II	III	IV
I	—	+	+	+
II	—	—	+	+
III	—	+	—	+
IV	—	—	—	—

Happ has shown that the fixed groups are not present in the blood of infants at birth, but that as a rule they are established during the first year, although some are delayed for four or five years. He has also shown that the groups are established in the cells earlier than they are in the serum. There is no doubt that heredity plays a great part in the establishment of the group to which an individual belongs.

Case No. 1: Patient was a white female, age about 30 years. On February 10, 1922, patient developed an acute colitis, followed by an erythema multiforme, which was accompanied by an irregular temperature. Gradually the patient's condition became more unfavorable and she was admitted to the Allegheny General Hospital March 3d. On March 6th blood culture showed bac. lactis aërogenes. The same organism was isolated from the blood and also from the urine on each of three subsequent attempts between March 6th and March 30th. The later cultures contained streptococcus fecalis (viridans) and bacillus pyocyaneus in addition to the bac. lactis aërogenes.

March 17th the condition of the patient had become so much worse that a transfusion was deemed advisable. Her blood belonged to group III according to the Moss classification. A suitable group III donor was found, and on March 18th, 150 c.c. of blood were given intravenously. Again on March 20th, 300 c.c. of blood from the same donor were given after the bloods had been tested for compatibility. No unfavorable reaction followed either transfusion. March 23d, when the two bloods were again tested, the one against the other, it was found that the serum of the patient strongly agglutinated the cells of the donor. The cells of the two bloods were then reëxamined to rule out the possibility of an error in the former groupings. They were found to belong to the same group, i. e., group III, as had been found on the previous examinations.

Several other persons volunteered as prospective donors. Among them were: 1 group I; 5 group II; 8 group III; and 4 group IV. The patient's serum agglutinated the cells of every applicant, irrespective of the group to which he or she belonged. Her cells, however, gave the typical reactions of normal group III cells.

On March 25th another sample of blood was obtained for examination. Both serum and cells from this specimen reacted in a perfectly normal manner so far as the isohemagglutinins were concerned. Two of the group III donors whose cells had been agglutinated by the patient's serum during the period of disturbance of the isohemagglutinins, acted as satisfactory donors on March 26th and 28th. No reaction followed either of these transfusions.

Case No. 2: Patient was an Italian female approximately 40 years old, who had been sent to Allegheny Hospital January 1, 1923, in an unconscious condition, by a public health worker.

On January 3d blood culture contained a type III pneumococcus.

Patient died January 5th, four days after admission. Before death, however, a sample of blood was collected for grouping. Results of grouping her cells showed that she belonged to group III. Her serum, however, agglutinated all four groups of cells exactly as the preceding case had done.

A satisfactory explanation for the appearance of the peculiar reaction in these two instances was wholly lacking. Several suggestions, however, have presented themselves for consideration. Chief among these have been:

1. A change in the pH. of the blood.

2. The presence of these organisms or of some toxin produced in the blood.

3. The presence of some agglutinating substance secreted by the bacteria, either within the blood or in the tissues, and absorbed into the blood stream.

It is believed that the bacterial growth is not wholly responsible for the above changes, but that the true cause was probably a physico-chemical one which has not been determined.

Finally it is strongly emphasized that in preparing for transfusions one should not be satisfied with having the patient and donor grouped with standard sera, but should always insist upon having the serum of the recipient tested against the cells of the donor and vice versa, even though they belong to the same blood group.

Dr. O. Pine queries: Is it not about time again for the public press to focus its spotlight upon some alleged medical or surgical genius from wonderful Europe, a la Friedman or Lorenz, and use up tons of paper and barrels of ink in damning "the bigotry, the narrow-mindedness" of the medical profession in failing to prostrate itself instantaneously before the press-agented idol?

Dr. O. Pine queries: What a splendid example to us all—to the medical organizations of the various states, of the different counties, to the members themselves in their professional contacts and contracts—the union of Delaware and Pennsylvania in the ATLANTIC MEDICAL JOURNAL! "Vade retro" provincialism! "Te salutamus" broad-mindedness!

Dr. O. Pine queries: To the medico who is rated as a poor, injudicious investor—why not invest your all in "Medicine and Surgery," Preferred and Common?

DIPHTHERIA

The children of the well-to-do are more susceptible to diphtheria than the children of the poorer classes, according to the best-known medical authorities. This is because the segregation and relative isolation of the well-to-do children renders them more liable to infection in case of exposure than the poorer children. American children have the disease far more frequently than the children of Italian or foreign extraction, according to Dr. Abraham Zingher, assistant director of the Research Laboratory of the Department of Health of New York City, writing in *Mother and Child,* the official organ of the American Child Health Association.

"It is an extraordinary fact that, by application of the Schick test for diphtheria there were found to be sixty or seventy-five per cent of susceptible children in the schools located in the better sections of the city compared with fifteen to twenty-five per cent in the schools located in the poorer sections," says Dr. Zingher. "The racial and hereditary family factors also seem to have some influence on these results. Some of the highest percentages of positive Schick test have been found in families of native American stock. Fairly higher percentages have also been found among the colored children. On the other hand, children of Italian extraction have shown the smallest proportion of susceptible individuals."

Great forward strides have been made since 1895 in the treatment of diphtheria, according to Dr. Zingher. By means of the antitoxin introduced in that year the mortality from this disease has been reduced from fifty or sixty per cent down to ten per cent, but there has been a startling increase in the number of cases reported during the past two years. In 1920 there were 149,600 cases of diphtheria in the United States, and in 1921 there were 209,000 cases.

"Diphtheria still presents a very formidable problem," says Dr. Zingher, "the elimination of which requires our best efforts. Fortunately we have within our hands at the present time methods for the eradication and control of diphtheria. These are, first the Schick test, and second, active immunization with diphtheria toxin-antitoxin. We believe that the ultimate control of diphtheria is only a matter of time.

"We emphasize the urgent necessity of immunizing against diphtheria all the younger children from six months to six years of age. Fully eighty to eighty-five per cent of all cases of and deaths from diphtheria occur in children under the age of five years. It is, in fact, the foremost fatal disease in children from one to three years of age.

"The application of the Schick test is a very simple little procedure and is rapidly carried out. Most of the children say it feels like a mosquito bite. The injections of toxin-antitoxin, three of which are given at weekly intervals to every child that is susceptible to diphtheria, produce a lasting and probably permanent immunity."

American Child Health Association, 370-7th Ave., New York City.

Dr. O. Pine queries: Why the super-courtesy exhibited in discussions toward fantastic theories and treatments that violate the canons of logic? Why style a half-proved, half-fledged affair an "epoch-making discovery," or regard a six-months' medical experiment as "placing for all time this subject upon a firm, permanent basis?"

HOTEL ACCOMMODATIONS

FOR THE MEETINGS OF THE

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

TO BE HELD IN

PITTSBURGH, PENNSYLVANIA

SEVENTY-THIRD ANNUAL SESSION, OCTOBER 1-4, 1923

HEADQUARTERS—WILLIAM PENN HOTEL

To Delegates, Members and Guests:

There is set out in this communication full information relative to hotel accommodations for delegates, members and others, including guests, who will attend the Seventy-third Annual Session of the Medical Society of the State of Pennsylvania, to be held in Pittsburgh, Pennsylvania, October 1-4, 1923.

The William Penn Hotel, centrally located and readily accessible to practically all transportation lines of Pittsburgh, has been designated as headquarters. The management has shown every desire to coöperate in making our meetings a success.

It is important that your reservation be made as early as possible in order that accommodations at the particular hotel you wish to patronize may not be exhausted. Detach, fill in and mail the attached reservation blank direct to the hotel of first choice.

Instructions for Making Hotel Reservations

In making your reservation please employ the following procedure:

1. Select your own hotel as per enclosed schedule. Note that provision is made for second and third choice.

2. Detach, fill out and mail the attached reservation blank direct to the hotel which you indicate as your first choice.

3. If rooms are available at the hotel which you indicate as your first choice you will receive acknowledgment and confirmation from that hotel.

4. If the accommodations at the hotel which you have indicated as your first choice are exhausted, your request will be referred to the hotel committee, which committee will take up with the hotels of second and third choice the question of accommodations and advise you, if made. You will also receive confirmation direct from the hotel at which reservation has been made.

5. Should accommodation be unobtainable at hotels of second and third choice, the hotel committee will make reservation for you in an equally desirable hotel and inform you of the name and address of such hotel. The hotel will also confirm to you direct the reservation made.

6. Should you arrive in Pittsburgh without having made hotel reservation, communicate at once with the chairman of the hotel committee, Dr. I. H. Alexander, 725 Jenkins Bldg., Pittsburgh, Pa., Bell Phone, Smithfield 1566, and every assistance will be given.

7. If, after making reservation, you find it is impossible to attend, it is important that you immediately notify the hotel which has agreed to accommodate you.

HOTEL COMMITTEE

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Hotel Rates Per Day

WILLIAM PENN HOTEL, WILLIAM PENN PLACE—HEADQUARTERS

All guests attending the Session can be accommodated at this hotel if reservations are made sufficiently early, at the following rates:

Court Rooms: Single with shower bath, $4.00 and $5.00; with tub bath, $4.50, $5.00 and $5.50 per day. Double with shower bath, $6.50; with tub bath, $7.00; with twin beds, $8.00 per day.

Outside Rooms: Single with tub bath, $6.00 and $7.00 per day; double with tub bath, $8.00 and $9.00; with twin beds and tub bath, $9.00, $10.00 and $11.00 per day.

Other Hotels

Name and Location	*Rooms Without Private Bath*		*Rooms With Private Bath*	
	Single	*Double*	*Single*	*Double*
Fort Pitt Hotel, Penn Ave. and 10th St.	$2.50 to $3.00	$4.00	$3.50 to $5.00	$5.00 to $8.00 (twin beds, $6.00 to $10.00)
Seventh Avenue Hotel, 7th Ave.	$2.00 to $3.00	$4.00 to $5.00	$3.00 to $5.00	$5.00 to $8.00
Hotel Schenley, 5th Ave. and Bigelow Boulevard	$4.00	$6.00	$7.00	$8.00
			Two connecting rooms with bath for 2 persons, $12.00 per day.	
			Two connecting rooms with bath for 4 persons, $14.00 per day.	
Hotel Henry, 417 5th Ave.	$2.50	$4.00	$3.50	$5.00 and up

APPLICATION FOR HOTEL ACCOMMODATIONS

Seventy-third Annual Session of the Medical Society of the State of Pennsylvania, Pittsburgh, Pa. October 1-4, 1923.

Hotel ..... 1st Choice
(Mail application to hotel of first choice)

Hotel ..... 2d Choice

Hotel ..... 3d Choice

Kindly reserve the following:

Number of rooms ..... with bath $..... per room.

Number of rooms ..... without bath $..... per room.

These rooms to be occupied by ..... persons. If possible state names of persons constituting party.

....

....

Arrival: Date .....A. M.....P. M.

Name .....

Address ....
(street) (city) (state)

Date .....

Note to Hotel named as First Choice: If hotel of first choice is unable to make reservation requested, that hotel should immediately forward this application and all other correspondence, if any, to Dr. I. H. Alexander, Chairman, Hotel Committee, 725 Jenkins Building, Pittsburgh, Pa.

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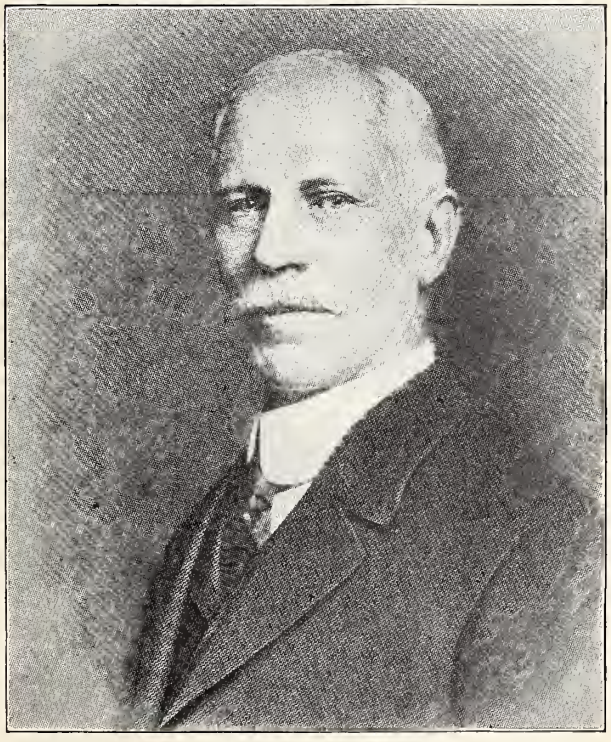
EDITORIALS

OUR PAST PRESIDENTS

It is always a loss to any organization when a man passes on who has been interested enough and useful enough in the work to have filled the highest office in the power of the organization to bestow—the presidency. Even though his term of office may have expired, his interest and his influence continue through the years, and his loss always leaves a vacancy that can be filled by no one else.

Such a loss has been recently sustained by the Medical Society of the State of Pennsylvania, when Dr. Isaac C. Gable, who was our president in 1906, died at his home in York on April 12th from uremic poisoning.

Dr. Gable was born in Windsor Township, York County, in 1849, the son of Valentine and Mary Miller Gable. He was educated in the public schools and at the Pennsylvania State Normal School at Millersville. Later he taught in the schools of Pennsylvania, Ohio and Indiana. In 1874 he began the study of medicine in the office of Dr. James W. Kerr, of York, and was graduated from the Medical Department of the University of Pennsylvania in the class of 1877. During his undergraduate period and for a year after graduation he was a private student of Dr. Charles T. Hunter, at that time clinical professor of surgery at the University. In 1878 Dr. Gable began the practice of medicine in York and continued in active practice there until the end of his life. He early became one of the leading members of his profession in that community, and by his conscientious and faithful work won a large and appreciative following.



ISAAC C. GABLE, M.D.

Dr. Gable was the pioneer of abdominal surgery in York County and became broadly known for his skill as a general surgeon. He was one of the founders of the York Hospital but was not actively connected with this institution for many years. The death of Dr. Gable removes one of the prominent landmarks in medicine in Pennsylvania. He was always one of the strongest supporters of all thought and action leading to higher professional standards. For many years he was prominent in the State Society, serving six terms of three years each as a member of the Board of Trustees. From 1891 to 1900 he was a member of the State Committee on Public Policy and Legislation, and for seven years served as chairman of this committee. During this period of service he distinguished

himself for his strong and effective work in securing the enactment of the medical law of 1893, which regulated medical practice in Pennsylvania for 20 years. For twelve years, during the administration of Dr. Benjamin Lee as president of the State Board of Health, Dr. Gable served with marked ability as medical inspector of York County.

Dr. Gable was an active member of the American Public Health Association and of the American Medical Association, becoming a member of the latter in 1880. At the Milwaukee meeting in 1891 he was elected chairman of the Pennsylvania delegation. At the meeting in Portland, Oregon, in 1905, and in Boston, in 1906, he served as a member of the House of Delegates. Dr. Gable was also a member of the Pan-American Medical Congress and assisted in the organization of that body. He was an active member of the York County Medical Society, was president of that body in 1890, and held various other offices at different times.

Dr. Gable was a member of the York Chamber of Commerce, the York County Historical Society, the National Geographic Society, the Pennsylvania Forestry Association, the General Alumni Society of the University of Pennsylvania, the General Alumni Society of the Medical Department of the University of Pennsylvania, the Philadelphia Alumni Society of the University, the Medical Club of Philadelphia, the Lafayette Club of York, the York Country Club and the York Motor Club. Dr. Gable was a Presbyterian and a member of the Board of Deacons of the First Presbyterian Church of York.

In 1888 Dr. Gable was married to Miss Eva A. Fondersmith, of Lancaster, Pa. His widow, one son, Raymond F., a teacher of Romance Languages in the York High School, and one sister, Miss Mary A. Gable, survive him.

The past year has seen the the death of three of our past presidents, Dr. William S. Foster (1895), Dr. Cyrus Lee Stevens (1919), and recently Dr. Gable. Of the 73 presidents of the Society, but 16 are now living, many of whom are still taking an active part in the work of the Society.

INFORMING THE PUBLIC IN MATTERS MEDICAL

The attitude of the medical profession and of the public towards the dissemination of medical knowledge to the laity has changed greatly in the past decade. We do not refer to the signed articles presumably paid for by newspaper syndicates and often accompanied by wood cuts of the writers—nor do we refer to the "questions and answers" such as "Question: My hair has been falling out lately. What shall I do for it? Answer: Bathe the feet carefully morning and evening for two weeks. If not better, restate your question and enclose a stamped addressed envelope."

Rather, we refer to the large question of presenting to the public information concerning preventive medicine and hygiene. We repeat, the attitude of the public and the profession has changed in this matter greatly of late years. However, a real problem has presented itself in the premises.

It seems difficult or impossible for many of the profession to distinguish the difference between imparting useful information concerning health matters to the public and advertising their own particular abilities.

It is probably true that many times the "offending" material (speaking from an ethical standpoint) is the result of the too friendly attitude of the local editor or reporter; but whether that is true or not the "offense" frequently occurs.

The public should be given information in matters medical; and the information, to be of real value, should come from a medical practitioner, but Heaven preserve us from having the subject matter introduced as it too frequently is by some such sentences as "The subject is handled in an unusually attractive and forceful way by Dr. A., who has the most extensive and thorough training along these lines of any physician in this district."

We repeat—the public ought to be informed upon medical questions by medical practitioners, but in presenting this information the ethics of the profession should always be carefully guarded.

If the medical profession is to save itself from everlasting disgrace something will have to be done to make it possible to present these proper subjects of information without degenerating into a form of vulgar newspaper advertising.

C. R. P.

THE DOCTOR AND HIS VACATION

In what field of endeavor other than medicine do you find men giving all their time and effort to helping others and forgetting self? Doctors should realize that in order to do their best at all times they must relax once in a while and get out of reach of the telephone. A brain beset with responsibility for the lives of others has very little spare time to devote to the happier, lighter vein of life. When an athlete trains too hard he becomes stale and has to quit for a while,

and so it is with others. It is also very easy to get in a rut, and hard to get out of it.

Everyone should so arrange their affairs that a complete change of scene from the everyday strife and turmoil will enable them to clear away the cobwebs, take a new lease on life, and have the inspiration to resume work again with a rejuvenated feeling of pleasure and happiness. Our patients like to have the example of good living typified in the person of their physician. Our health is the best asset we have. G. H. C.

WHAT NURSES ARE TAUGHT

One of the things that enters into the "nursing problem" is, what is she taught during her course of training? Is the teaching, especially the lectures given by the staff, in a direct line with her subsequent work? A reference to the outlines of the prescribed courses will strike one with the very evident high tone of the medical education obtained by the nurses—too high toned in fact for nurses.

A speaker at the opening of a new hospital wing, referring to the nursing staff, recently said, "They are well trained young ladies, their education is on a par with that of the medical student!" He unconsciously told a great truth. If one were to sit through a few lectures given to the nurses by the staff, the difference between them and those delivered in a medical college would hardly be noticed. All of this effort seems hardly in keeping with the end result, if it really is to be desired. Certainly a knowledge of the functional anatomy of the dorsal spinocerebellar tract of the spinal cord is not in any way going into the making of a better nurse. Nor is a study of blood chemistry going to enhance her value as a sick-room attendant. Examples could be given on and on as to the futility of this advanced teaching to general classes. The reading of a few answers to examination questions will enlighten anyone interested, as to just how far the words of the lecturer have penetrated.

Why continue the travesty? Why go on with the pretense of educating in medicine and surgery when it is apparent that no such thing is being accomplished and would be doing no good if it were. If there be any who conscientiously desire this so-called "advanced schooling," it could be had by taking part or the whole of a medical course and gotten right.

If these medical college lectures were eliminated and others specifically related to nursing substituted, certainly a good deal of time in training could be cut off. At the same time more hours could be given to real practical training in the wards, operating rooms and in the special departments. With the focusing of attention on the practical course, an improvement might be observed there.

The following two questions were asked in the course on "Hospital Housekeeping" in a leading Pennsylvania hospital: The first one was, "How much paint would be required to cover a room 12x13x9 feet?" The other was, "How long should a crate of oranges last?" One somehow gets the impression here that something is missing. Even a casual observer will see that there is a great lack of common sense. There also seems to be an attempt by somebody to give the appearance of great learning. But all of this is not getting us anywhere and it is not supplying the sick with the right kind of nurses.

There will always be a demand for a limited number of higher trained nurses, but this is all out of proportion to the number required to care for the great mass of sick people. A. J. S.

INSULIN OR ILETIN

The increasing number of reports of the use of iletin gives rise to a strong suspicion that iletin is being administered in cases that would be better off without it. Any case of diabetes that can be rendered sugar-free and acid-free and brought up to a maintenance diet sufficient for the enjoyment of life and the pursuance of an occupation, by the application of the Allen method or the modifications of Joslin or Woodyatt should not be given iletin except in an emergency. Such an emergency might be the necessity of a surgical operation or the sudden interference with carbohydrate tolerance, threatening acidosis and coma, as a result of an acute infection or other cause.

The indications for iletin, as at present recognized, are as follows: (a) Diabetes in children who cannot be properly nourished without it; (b) cases of diabetic coma; (c) cases in which the carbohydrate tolerance cannot be brought up high enough by simple dietetic treatment to make the individual physiologically efficient.

Iletin is an epoch-making addition to our medical armamentarium, but it should not be abused and it does not obviate a thorough practical knowledge of dietetics and the physiology of metabolism on the part of any physician who undertakes the treatment of diabetic cases.

L. L.

THE STUDY OF THE GALL-BLADDER BY MEANS OF THE ROENTGEN RAYS

Disease of the gall-bladder gives rise to more vague and indefinite symptoms than probably any other organ in the abdomen. Comparatively few cases give rise to the frank and classical symptoms that we learned when in college. Indefinite gas symptoms, and indefinite stomach symptoms are the most frequent.

Undoubted assistance can be obtained from the skillful use of the roentgen rays. In the cases with gall-stones, about twenty-five per cent can be definitely shown upon the x-ray plates or film. About twenty-five per cent more give indefinite shadows in the gall-bladder region, which evidence in itself is not sufficient for diagnosis, but when taken in conjunction with the clinical symptoms will make the diagnosis reasonably certain. This is true especially if a complete gastro-intestinal study has been made, and the stomach, duodenum, appendix and bowel have been found normal. Such a complete examination should always be made.

The demonstration of the gall-stones depends primarily upon the composition of the gall-stones, and mainly upon the calcium content. In addition, absolute stillness on the part of the patient is required. The stouter the patient and the more solid the tissues, the greater will be the difficulties. Because of the possibility of movement of the diaphragm, or movement of an adherent duodenum, it is necessary to make at least eight to twelve special films of the gall-bladder, so as to obtain one or more with no movement. A careful, and skillful technique is absolutely essential.

In addition to this direct evidence, which is of diagnostic value in about fifty per cent of cases, one can obtain indirect evidence by means of a careful study of the duodenum roentgenoscopically and roentgenographically. This has been especially emphasized by George, Cole and Burnham. This evidence consists of the pressure effect of an enlarged gall-bladder upon the bulb of the duodenum, or evidence of irregularity or angulation in the second part of the duodenum, caused by pericholycystic adhesions. This indirect evidence may be present in conjunction with gall-stones, but may also be formed independent of gall-stones. This indirect evidence should be found in an additional twenty-five to forty per cent of cases. This evidence is obtained best, but not exclusively, in the oblique prone position, and films should always be made in this position.

Therefore, by patient and skillful work, valuable evidence of gall-bladder disease can be obtained in from seventy-five to ninety-per cent of cases. If a reasonably complete abdominal study is made, the cause of the patient's symptoms will nearly always be found. G. E. P.

HOSPITAL STANDARDIZATION

Some years ago, when I first began to consider the question of hospital standardization, I felt that all hospitals had exactly the same problems, each owing a duty to the community, the medical student and the profession. Upon mature consideration I am now convinced that an obstetric hospital, or a general hospital with an obstetric department, must, in addition to the well established principles, go beyond those of the community who are sick and suffering, and reach the center of every home, searching out the prospective mother, establishing contact with her and maintaining an educational campaign to the extent that each and every birth will have been preceded by at least seven months of prenatal care by the doctor of her choice or a prenatal clinic.

The large majority of children always have, and always will be born in the homes of the people. They will largely be attended by physicians in the immediate neighborhood, and it is but fair to assume that in the very nature of things the neighborhood physician—the twenty-four-hour-a-day doctor—has a just claim to such cases as can properly compensate him for his time and expense, and are free from complicating pathology. Beyond this he cannot and must not go. His training and experience is not sufficient to warrant excursions into grave surgical conditions, even though the home technique be well adapted to the normal delivery.

If I am correct regarding the legitimate field of the general practitioner, it leaves for the trained obstetrician of the hospital, the poor and the cases of obstetrical pathology. By granting to the average physician this right, it is not intended that the obstetric errors of the past shall be repeated by each succeeding generation, or even be continued by indifferent or incompetent men now engaged in the practice of obstetrics.

Granting the correctness of my deductions, the obstetric hospital must minister to the poor of the community, surgically care for cases of obstetric pathology, train obstetric nurses, train the student to care properly for the normal and to recognize pathology, and last but not least, correct existing evils in the field of obstetrics as now practiced by the unskilled or incompetent practitioner of medicine.

The care of pregnant women begins with con-

ception and continues to the end of the puerperal period. At the beginning the attendant must determine the fitness of the mother to sustain properly the increasing nutritional demands of the fetus; her ability to provide increased space for its growth and development, free from the unfavorable influence of encroaching tumor masses or latent inflammatory exudates. A careful search should be made for latent or active general conditions (focal infections, tuberculosis, syphilis, cardiac conditions), upon which the pregnancy may exert an unfavorable influence, or they in turn may result disastrously to the continued fetal development. The pregnant woman should be advised of the necessity of living within the limits of her body metabolism; that the presence of a pregnancy constitutes a temporary overload, which must be compensated for by a proper conservation of energy expenditure. A continued supervision of the maternal welfare, with a determination of the relative size of the passage and passenger, and corrections of unfavorable presentation, should constitute the minimum standard for prenatal care.

The delivery room technique of the majority of hospitals has undergone great improvement during the past decade. In many institutions complete disregard of the dangers of vaginal manipulations is still noted, such examinations being made solely to determine the progress of labor, when equally reliable information could be secured by abdominal palpation or rectal examination. This practice will continue until each examination, with its findings, is recorded, and staff conferences clearly demonstrate the increased safety, the decreased morbidity and mortality of the women not submitted to vaginal examinations. In the Magee Hospital we have a simple delivery room technique, printed and posted in several conspicuous places, to which the visiting physician usually cheerfully subscribes and practices, or eliminates himself after his first case. The use of forceps or other method of delivery is permitted, but we insist on recording the indication, and the delivery must be done in the presence, and with the assistance of the house physician.

Postpartum care is briefly outlined, with proper charts for recording the care of mother and baby. It is obligatory upon every physician to dictate his findings each day at such time as he visits the patient. Visiting physicians are invited to monthly staff conferences, where all mortality and morbidity occurring in the hospital during the past month, is reported and discussed. Naturally it is not a review of unqualified successes, nor are all the cases free from criticism. We avoid hardness and crudity, but give and receive such constructive criticism as a careful analysis of the case suggests, trying thereby to become more thoroughly familiar with obstetric pitfalls and dangers.

Visiting physicians (non-staff) are welcome to avail themselves of the entire facilities of the hospital, except the wards, which are reserved for teaching purposes. The hospital supplies neighboring physicians with every modern facility for the proper handling of cases, and such suggestions and instructions as are found to be of practical benefit, outlines a simple delivery room technique, provides competent nursing assistance, and insists on complete postpartum notes and a proper record of the patient's condition on discharge.

It is only by such constructive coöperation with the present-day practicing physician that opportunity can be afforded him to keep apace with the rapid advance of present-day obstetrics. Without progress on the part of the graduate physician, obstetric mortality and morbidity cannot be improved as rapidly as the situation demands. A desirable future addition, and I hope not a remote one, will be that every patient, when admitted, is accompanied by a full record of proper prenatal care.

In addition to the usual training, all obstetric nurses should be taught to observe and record the rate, character and location of fetal heart sounds at frequent intervals during the second stage of labor; strict adherence to the obstetric application of a proper surgical technique; the dangers of postpartum hemorrhage with its prevention and treatment, as well as a correct method of resuscitation and ophthalmic prophylaxis.

Students must attend prenatal clinics and be taught that no woman should be permitted to go into labor without pelvic measurements; correct determination of presentation and position; to depend largely upon abdominal palpation and rectal examinations to determine the progress of labor; that manual or instrumental deliveries should only be considered when definite indications exist; that injuries to the perineum large enough to see should be sutured; that the third stage of labor should be and usually is spontaneous, and that the invasion of the birth canal for any reason converts a normal physiological process into a potentially septic one.

Obstetrics always presents a new frontier and the task that lies before us is even greater than the accomplished facts of the past. Sterility, miscarriage, prematurity (both time and developmental) and the toxemias of pregnancy must be successfully combated. The ideal will only be reached when every woman, who so desires, may

safely become the mother of living, healthy children. To this end the hospital must advance beyond being the "Human Repair Shop," and assume the responsibility for the propagation of the race, the safety of motherhood, and the future welfare of the child.

Our task is one of study and organization, and the favored few in each community willingly, or unwillingly, must be generous in the division of proper facilities and opportunity, to the end that all are competent with the normal and coöperative with the abnormal. HAROLD A. MILLER.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE BUSINESS VALUE OF PERSONALITY

Some sixty-odd years ago two little boys were born, and they were as different as two boys could be. John was a scholar, a dreamer; Frank was a "go-getter." John was much the more scientific; he knew things—things that Frank never worried his brain about. John was interested in *things* and could discuss learnedly almost any subject under the sun—even subjects about which he knew very little—and he could write in a most interesting vein. Frank could tell the funniest stories you ever heard; he was interested in people and had a host of friends; and he had a perfect genius for getting what he wanted. John became well known in the literary world, but as a practitioner he never made a conspicuous success. Frank acquired a practice so large that he almost broke down under the strain of attending to it. John made a name for himself and remained poor to the end of his days; Frank made money. Both were men of ability; both were well educated; both were ambitious; both were successful—but in what different ways!

What, then, is the secret of success? What, in fact, is *success?* Whatever it may be from an idealistic point of view, from a business point of view it is the achievement of your ambition—the ability to get what you go after. And the secret of success is undoubtedly *personality.*

Personality is a curious thing, one of those almost-impossible-to-analyze things that is made up of a variety of characteristics. Yet, perhaps more than any other element in life, does it determine the place a man is to occupy in the economic order. Perhaps, according to Berman, in the not far distant future, we shall be able to regulate it at will. Just at present its regulation is a dangerous experiment, as witness the recent news of Ex-Kaiser Bill. Nevertheless, even though we may be able to develop a safe method of personality-regulation, the employment of it will of necessity be determined by the personality of the subject, for only those of a rather adventurous disposition would be likely to submit to the treatment.

However, this is of the future. The subject in which we at present are interested is how to utilize the personality with which each of us is endowed to further our own pursuit of health, wealth and happiness.

As with every other attribute of the human animal, personality must be trained. Even the most docile of us is not fit to perform in the circus of life without proper discipline and teaching. One cannot allow one's personality to grow wild, like a weed, without pruning at the proper seasons, without proper fertilization and cultivation, without support at its weak points and direction at its strong points. This training should be begun before the child has left the cradle (or the more modern crib!) and should never cease until he has drawn his last breath (perhaps it will not cease even then, if Sir Conan Doyle is correct!). The best trainer is the owner of the personality, but his chief assistants are the other human beings with whom he comes in contact, strongly reinforced by the events of life, which are constantly exerting their benevolent disciplinary influence.

We are accustomed to thinking that the personality is what it is; that it cannot be changed. This is wrong. It is all a question of whether or not we *want* it changed. If a man craves the love and admiration of his fellow men, he will surely make every effort to suppress the unlovely and unadmirable traits in his character, he will certainly try at least to make others think he is interested in them—even though the effort may be a strain on his disposition—and the effort will actually tend to make him what he wants to seem to be. It all depends on what we want out of life. If it is financial success we are after, it is surprising how one's personality may be bent to attain that goal. If it is just plain happiness and a sense of well-doing, which after all is probably the greatest reward man can have, it is not difficult to incline oneself in that direction. If it is attainment in the scientific, the literary world, or what you will, it is possible to train the personality to assist in gaining whatever it is we wish most. It is all a matter of desire. What we want bad enough, we can usually attain.

So, do not neglect your personality. It is one of the most valuable adjuncts to success that is in your reach—and you *can make it what you will.* Train your personality, and you will never regret the effort. M. S. B.

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

AFFILIATE MEMBERSHIP

The Board of Trustees at their May meeting recommended the creation of a new form of membership in our Society to be known as Affiliate Membership. This proposed addition to Article 4 of the Constitution will not in any way disturb the present forms of membership in the Society. This new plan is suggested in response to numerous requests from component county medical societies that a provision be made for certain members of such societies who have been active members for many years but who for good reasons desire to withdraw from active membership and at the same time retain some connection with the Society. The proposed amendment will be found on page 624 of this issue of the JOURNAL and will be acted upon by the 1923 House of Delegates. A careful study of the proposed amendment will demonstrate that while the privileges of Affiliate Membership are limited, they will at the same time permit an inactive physician to continue connection with his society and maintain affiliate membership in the American Medical Association. It should be borne in mind, however, that members who contribute any dues in any form to a component society will not be eligible for affiliate membership.

RESOLUTION

The Board of Trustees at their May meeting adopted the following resolution and ordered the same to be spread upon the minutes of the meeting:

IN MEMORIAM

CYRUS LEE STEVENS, M.D.

WHEREAS, The long and distinguished earthly career of Cyrus Lee Stevens is completed, we fully realize that a source of strength and inspiration has been cut off.

Dr. Stevens was a mighty influence in the highest developments of the organized medical profession in Pennsylvania during the last quarter of a century. For twenty-one years, while serving as Secretary of the Medical Society of the State of Pennsylvania, he served with its Board of Trustees.

The impress of Dr. Stevens as an educator, physician, humanitarian and faithful officer may be found throughout many of the records of our Board, and his influence for the best in the future development of the high purposes of our Society will continue through many years to come.

Therefore, be it resolved, That we express our deep sorrow for the loss of this true physician and wise counselor.

DONALD GUTHRIE,
THEODORE B. APPEL,
WALTER F. DONALDSON.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to May 19th:

ALLEGHENY: *New Members*—David Lipschutz, 1541 Center Ave.; Philip E. Schmidt, Children's Hospital, Pittsburgh. *Transfers*—Andrew G. Opinsky, New Kensington, from Fayette County Society; John W. Ildza, 1431 Woods Run Ave., N.S. Pittsburgh, from Washington County Society; Norman C. Ochsenhirt, 1417 Adams St., Pittsburgh, from Beaver County Society. *Resignations*—Milton Bachman, Youngstown, O.; Claude L. Bradford, Pittsburgh; William S. McCausland, Chula Vista, Calif.; Frederick A. Rhodes, Los Angeles, Calif.

CAMBRIA: *Transfer*—Charles C. Custer, Cresson, to Franklin County Society. *Removal*—Elmer E. Geissler from Nanty Glo to 9 Shady Lane, Johnstown.

CLEARFIELD: *New Member*—Nora M. McNerney, Du Bois.

CRAWFORD: *Death*—Robert N. Greenfield, Penn Line (Univ. of Mich. '69), March 11, aged 83.

DAUPHIN: *New Member*—Albert H. Bucher, 512 N. Second St., Harrisburg. *Removal*—William P. Evans, from Emaus to 101 E. Post Road, White Plains, N. Y.

ERIE: *Suspended*—Carl B. Lininger, Erie.

FRANKLIN: *New Member*—Max M. Teplitz, State Sanitorium, South Mountain, P. O.

LACKAWANNA: *New Members*—Walter L. Diller, Nicholson; M. B. Finneran, Carbondale. *Reinstated Member*—R. V. White, Brooks Bldg., Scranton.

LANCASTER: *New Member*—Samuel N. Park, Kirkwood.

LEHIGH: *Resignation* — Jeremiah F. McAvoy, Catasauqua. *Removal*—Lawrence H. Bloom, from Allentown to Phillipsburg, N. J.

LUZERNE: *Removal*—John F. Connole, from Plymouth to 587 Carey Ave., Wilkes-Barre.

LYCOMING: *Removal*—Harry C. Fuller, from Jersey Shore to 2301 Ligonier St., Latrobe (West. Co.).

MONTGOMERY: *New Member*—Albert Schafenacker, North Wales.

MERCER: *Removal*—Frederick C. Potter, from Mercer to Peoples Hospital, Akron, O.

NORTHAMPTON: *New Member*—Edward C. Oestereicher, 73 W. Ettwein St., Bethlehem.

NORTHUMBERLAND: *New Member*—Roy B. Bast, Kulpmont.

PHILADELPHIA: *New Members*—Thad L. Montgomery, 1426 Spruce St.; Maxwell Cherner, 1939 So. Sixth St., Philadelphia. *Removal*—Stanley E. Biddle, from Philadelphia to 1200 Fayette St., Conshohocken (Montg. Co.); Francis X. McCarthy, from Philadelphia to Conshohocken (Montg. Co.) *Deaths*—Henry N. Speer of Philadelphia (Jeff. Med. Coll. '93), April 19; William W. Stevens of Philadelphia (Ensworth Med. Coll., Mo., '92), April 21, aged 62.

SUSQUEHANNA: *New Member*—Franklin A. Stiles, Great Bend.

SCHUYLKILL: *New Members*—James Gray, Cressona; William J. O'Neill, Ashland.

TIOGA: *Death*—Clarence W. Webb (Coll. Phys. & Surg., Baltimore, '79), of Wellsboro, Feb. 5, aged 68.

WASHINGTON: *New Member*—Samuel A. Kamerer, Cokeburg. *Removal*—J. A. Gormley, from Canonsburg to Washington Trust Bldg., Washington.

WARREN: *Death*—Willis M. Baker of Warren (Univ. of Buffalo '78), recently, aged 66.

WESTMORELAND: *New Member*—James H. Fiscus, Cope Bldg., Greensburg.

YORK: *Death*—Isaac C. Gable of York (Univ. of Penna. '77), April 12, aged 74.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since April 19th. Figures in first column indicate county society numbers; second column, State Society numbers.

April 20	Montgomery	152–153	6957–6958	$10.00
	Luzerne	223	6959	5.00
	Snyder	9	6960	5.00
	Lancaster	107–112	6961–6966	30.00
	Wayne	20–21	6967–6968	10.00
April 21	Lawrence	52	6969	5.00
	Tioga	27	6970	5.00
April 23	Mercer	70	6971	5.00
	Bradford	45–47	6972–6974	15.00
	Erie	131–133	6975–6977	15.00
	Northampton	128–130	6978–6980	15.00
	Philadelphia	1826–1850	6981–7005	125.00
April 24	Northampton	131–133	7006–7008	15.00
April 25	Dauphin	154	7009	5.00
April 26	Beaver	61	7010	5.00
	Wayne	22	7011	5.00
April 27	Luzerne	224	7012	5.00
	Allegheny	1204–1217	7013–7026	70.00
April 28	Mercer	71	7027	5.00
	Wayne	23	7028	5.00
April 30	Beaver	62	7029	5.00
May 1	Westmoreland	148–149	7030–7031	10.00
May 2	Westmoreland	150	7032	5.00
	Wayne	24	7033	5.00
May 3	Lackawanna	218–223	7034–7039	30.00
	Northumberland	55-58	7040–7043	20.00
	Venango	51	7044	5.00
	Schuylkill	122–125	7045–7048	20.00
	Northumberland	59–60	9049–7050	10.00
	Dauphin	155–156	7051–7052	10.00
	Lehigh	105–107	7053–7055	15.00
	Westmoreland	151	7056	5.00
May 4	Lancaster	113–114	7057–7058	10.00
May 5	Lawrence	54–55	7059–7060	10.00
	Susquehanna	18	7061	5.00
May 7	Erie	134	7062	5.00
	Luzerne	225–227	7063–7065	15.00
May 8	Philadelphia	1851–1862	7066–7077	60.00
May 10	Center	25–26	7078–7079	10.00
	Somerset	46	7080	5.00
May 12	Luzerne	228	7081	5.00
	Venango	52	7082	5.00
	Washington	119–120	7083–7084	10.00
May 14	Clearfield	66	7085	5.00
	Luzerne	229	7086	5.00
	Franklin	52	7087	5.00
May 15	Cambria	136	7088	5.00
May 17	Venango	53	7089	5.00
	Montgomery	154	7090	5.00
	Northampton	134	7091	5.00
	Allegheny	1219–1222	7092–7095	20.00
May 21	Venango	54	7096	5.00

PROPOSED AMENDMENT TO THE CONSTITUTION AND BY-LAWS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

As per the requirements of Article XII of the Constitution, the following proposal for alteration is published in the JOURNAL of this Society three months before the next annual session.

Article 4 of the Constitution to be amended by adding the following as Section 9:

A member of this Society who has been a member for a continuous term of fifteen years, who is not less than sixty-five years of age, may on request of his component county medical society be made an Affiliate Member provided he holds such membership in his component society as shall relieve him from the payment of dues in his component society. A component society shall not be required to pay any annual assessment for an Affiliate Member. Affiliate Members shall be privileged to participate in the scientific discussions of this Society; they shall not receive the JOURNAL of the Medical Society of the State of Pennsylvania, except by personal subscription; nor shall they be entitled to any benefit from the Medical Defense Fund.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg

LEGISLATION

WORKMEN'S COMPENSATION ACT

In the April number of the ATLANTIC MEDICAL JOURNAL was published House Bill 846. This bill is an amendment to the Workmen's Compensation Act of 1915 amending section 306, paragraphs E and F. Since its introduction many hearings have been held and conferences conducted for the purpose of arriving at some

agreement with the insurance carriers, and as a result of these conferences the bill has been amended, reducing the amount of compensation and the length of time of treatment, both for the surgeon and the hospital, to the thirty days, which is now the present law. There are but a few differences which are still contended by the insurance people, viz., the separation of the hospital charge from the charge of the surgeon, the right of party in interest in any proceedings had or begun under the provisions of the Act and the remuneration for services rendered during the first ten days in case of death of employee.

We want to bring to the attention of the industrial surgeons of the State that unless more active interest is taken in this measure and influence brought to bear upon the members of the House and Senate, it is doubtful if this bill as amended will pass because of the strong influence against it. We would appeal to those who are anxious to have these changes incorporated that they exert their influence, because no amount of work by the Medical Legislative Conference would compare with what could be accomplished by the members in each county if they would use their influence with their individual representative and senator.

Chiropractic Bill

In the April number of the Journal we reported that House Bill No. 36, known as the Chiropractic Bill, had not made any further progress. Since that time the bill has been reported out of the Committee as amended and defeated on the floor of the House. Subsequently, a resolution was introduced placing the bill back upon the calendar, which prevailed, and under special order of May 21st the bill was brought up for consideration and final passage for the second time. The vote of the House was 78 for the bill and 95 against it, and as a result the bill fell. This closes the chapter on chiropractic legislation for the Session of 1923.

Osteopathic Bill

Senate Bill 242 to license osteopathic surgeons has passed the Senate and has been referred to the Committee on Health and Sanitation of the House. The provisions of the bill were set forth in the May issue of this Journal and it is unnecessary to repeat them except to say that in the final amendment to the bill the inspection of colleges and hospitals teaching osteopathic surgeons was inserted.

Other Bills

House Bill 395 to regulate the sale of caustic acid and caustic alkalies is now a law, having been signed by the Governor. This bill is of special advantage in that it will tend toward reducing the number of cases of accidental poisoning from household lye and other caustic poisons. Every package must contain a poison label in bold type.

Senate Bill 586, known as the "Code," has passed the Senate after numerous amendments, but we regret to note that the provisions relative to the Bureau of Medical Education and Licensure remain as originally introduced. It seems that the amount of work which the Bureau is required to accomplish, and which it now does under a salary system, is not thoroughly understood. Under the provisions of the Code which says "Each member of the Board other than the Superintendent of Public Instruction and the Secretary of Health shall receive $15.00 per diem while actually engaged in the work of the Board," it will probably be difficult to obtain the same class of service for this amount as has been given by the members of the Bureau under a salary system. The name of the Bureau will be changed to the "State Board of Medical Education and Licensure" under the same provisions as existed in the Bureau of Medical Education and Licensure. There is, however, a great opportunity in the administration of the Code to use this enabling legislation to reduce the efficiency, provided the proper interference be put forth to restrict the action of the Board.

COMMUNICATION

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: We present herewith the names of the committees and their chairmen elected by the Allegheny County Medical Society to serve for the 1923 Session:

Transportation Committee—Dr. John A. Hawkins, Chairman.

Editorial and Publicity Committee—Dr. Edward B. Heckel, Chairman.

Hotel Committee, for the reservation of rooms, rates, etc.—Dr. I. H. Alexander, Chairman.

Entertainment Committee for Tuesday evening—Dr. H. G. Schleiter, Chairman.

Clinics—Dr. E. E. Mayer, Chairman.

Exhibits—Scientific and Pathological—Dr. Samuel R. Haythorn, Chairman.

Ladies' Committee—Mrs. Chas. Aufhammer, Chairman.

Thursday Evening Entertainment—Dr. James D. Heard, Chairman.

Members desiring hotel reservations should either write direct to the hotel stating that they are making reservation for the Session, or to Dr. I. H. Alexander, Chairman of the Hotel Committee, who will assign reservations. Reservations should be made early in order to secure desirable rooms.

Very truly yours,
Harold A. Miller, Chairman,
Committee on Arrangements.

COUNTY MEDICAL SOCIETIES

ADAMS—James P. Dalbey, M.D., Gettysburg.
ALLEGHENY—Lester Hollander, M.D., Pittsburgh.
ARMSTRONG—Jay B. F. Wyant, M.D., Kittanning.
BEAVER—Perry Clare Smith, M.D., Ambridge.
BEDFORD—N. A. Timmons, M.D., Bedford.
BERKS—Clara Shetter-Keiser, M.D., Reading.
BLAIR—James S. Taylor, M.D., Altoona.
BRADFORD—C. L. Stevens, M.D., Athens.*
BUCKS—Anthony F. Myers, M.D., Blooming Glen.
BUTLER—L. Leo Doane, M.D., Butler.
CAMBRIA—Joseph J. Meyer, M.D., Johnstown.
CARBON—Jacob A. Trexler, M.D., Lehighton.
CENTER—James L. Seibert, M.D., Bellefonte.
CHESTER—Henry Pleasants, Jr., M.D., West Chester.
CLARION—Sylvester J. Lackey, M.D., Clarion.
CLEARFIELD—W. E. Reiley, M.D., Clearfield.
CLINTON—Clair B. Kirk, M.D., Mill Hall.
COLUMBIA—C. B. Yost, M.D., Bloomsburg.
CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenbaugh, M.D., Carlisle.
DAUPHIN—W. Minster Kunkel, M.D., Harrisburg.
DELAWARE—George B. Sickel, M.D., Chester.
ELK—Samuel G. Logan, M.D., Ridgway.
ERIE—Anna M. Schrade, M.D., Erie.
FAYETTE—Hugh Ralston, M.D., Uniontown.
FRANKLIN—Samuel D. Shull, M.D., Chambersburg.
GREENE—Thomas B. Hill, M.D., Waynesburg.
HUNTINGDON—John M. Keichline, Jr., M.D., Huntingdon.
INDIANA—H. Boydson Smith, M.D., Blairsville.
JEFFERSON—W. A. Hill, M.D., Reynoldsville.
JUNIATA—W. H. Banks, M.D., Mifflintown.

* Deceased.

LACKAWANNA—G. A. Clark, M.D., Scranton.
LANCASTER—J. Sullivan, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—John C. Bucher, M.D., Lebanon.
LEHIGH—Victor J. Gangewere, M.D., Allentown.
LUZERNE—H. Irvin Evans, M.D., Ashley, Pa.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
McKEAN—Francis DeCaria, M.D., Bradford.
MERCER—M. Edith MacBride, M.D., Sharon.
MIFFLIN—F. A. Rupp, M.D., Lewistown.
MONROE—William R. Levering, M.D., Stroudsburg.
MONTGOMERY—John C. Simpson, M.D., Norristown.
MONTOUR—John H. Sandel, M.D., Danville.
NORTHAMPTON—Wm. A. Finady, M.D., Bethlehem.
NORTHUMBERLAND—Charles H. Swenk, M.D., Sunbury.
PERRY—A. R. Johnson, M.D., New Bloomfield.
PHILADELPHIA—Franklin M. Crispin, Philadelphia.
POTTER—F. Gurney Reese, M.D., Coudersport.
SCHUYLKILL—Arthur B. Fleming, M.D., Tamaqua.
SNYDER—Percival J. Herman, M.D., Selinsgrove.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—P. G. Biddle, M.D., Dushore.
SUSQUEHANNA—Robert D. Mackey, M.D., Montrose.
TIOGA—H. A. Vosburg, M.D., Arnot.
UNION—Oliver W. H. Glover, M.D., Laurelton.
VENANGO—John F. Davis, M.D., Oil City.
WARREN—M. V. Ball, M.D., Warren.
WASHINGTON—Charles C. Cracraft, M.D., Claysville.
WAYNE—Hugh Stevenson, III, M.D., Honesdale.
WESTMORELAND—W. J. Walker, M.D., Greensburg.
WYOMING—Herbert L. McKown, M.D., Tunkhannock.
YORK—Gibson Smith, M.D., York.

JUNE, 1923

COUNTY SOCIETY REPORTS

CENTER—MAY

The meeting of the Center County Medical Society, commemorative of its fifty-second anniversary, was held at the Nittany Country Club, seven miles east of Bellefonte, on the 9th inst., and at which we had the pleasure of having present Dr. Lawrence Litchfield, of Pittsburgh, and Dr. Howard C. Frontz, of Huntingdon, President and President-Elect, respectively, of the Medical Society of the State of Pennsylvania, together with a number of physicians from Huntingdon and Clinton counties.

Dr. Litchfield addressed the meeting on the subject of "Some of the Diagnostic Problems of the General Practitioner," dwelling especially on those of a neurological character, emphasizing the use of the opthalmoscope in general practice and acquaintance with normal and abnormal appearance of the fundus of the eye (particularly choked disc) and significance of the latter. He stated that tumors of the brain and spinal cord were much more frequent than is generally supposed; that tumors of the brain, after those of the breast and uterus, were more frequent than of any other organ of the body, and described the symptomatic sequences of cord and brain tumors in relation to their location in these organs, viz., local motor and sensory disturbances. Symptoms of encephalitis and Parkinson's disease were differentiated, and also their resulting tremors.

The discussion on Dr. Litchfield's paper was opened by Dr. Frontz, who laid special stress on the present-day hospital conveniences, which are open to the rural as well as the urban physician, to help him in his diagnostic problems if he will avail himself of the opportunity. The discussion was continued by Drs. Cloyd G. Brumbaugh and John Keichline, of Huntingdon, and Drs. J. S. McGhee, D. W. Thomas and John B. Critchfield, of Lock Haven.

The meeting was an exceptionally interesting one, and to the general practitioner of great benefit.

At the close of the meeting an invitation to the dining room was extended, where twenty-five doctors sat down to a bountiful and deliciously prepared banquet which was enjoyed by all.

J. L. SEIBERT, M.D., Reporter.

ERIE—MAY

Following is an abstract of the address delivered before the Erie County Medical Society by George B. Roth, M.D., Cleveland, Ohio, on May 1, 1923:

THE ARSPHENAMINES; THEIR DEVELOPMENT AND NATURE

The several steps leading up to the development of the modern organic arsenical antisyphilitic agents were traced.

The cacodylates and arsanilates are of minor therapeutic importance as compared with the arsenobenzol type of organic arsenicals.

The principle representatives of the arsenobenzol type include arsphenamine (salvarsan), sodium arsphenamine, neoarsphenamine, phospharsenamine, silver arsphenamine and sulpharsphenamine. Whether sodium arsphenamine, phospharsenamine, silver arsphenamine and sulpharsphenamine represent distinct improvements over arsphenamine and neoarsphenamine cannot be answered at the present time.

Although closely related chemically, arsphenamine and neoarsphenamine were shown by biological and physicochemical tests, to be distinctly unlike. Arsphenamine was found to be relatively more stable while in ampule and under certain other procedures, than neoarsphenamine.

Shaking solutions of neoarsphenamine in the presence of air, increased their toxicity markedly. It was shown that arsphenamine alkalized according to the Ehrlich method, namely by adding sodium hydroxid to

the point of clearing, was decidedly more toxic than when alkalized by following the procedure recommended in the standard instructions recently issued by U. S. Public Health Service. (Reprint 774, U. S. Public Health Reports, August 4, 1922. This may be obtained upon application from the Surgeon-General, U. S. Public Health Service.)

It was shown by animal experiments that the above mentioned standard instructions for the preparation and administration of arsphenamine and neoarsphenamine should be adhered to strictly, to insure relative freedom from untoward results.

The age of the recipient was shown to be a factor in modifying the toxicity of arsphenamine, as evidenced by the fact that young, immature experimental animals were found to be more tolerant to arsphenamine than the older more mature animals. This suggests that in clinical practice the dose of arsphenamine for infants need not be proportionately smaller than the dose for the adult.

Inasmuch as all arsphenamines are tested in the U. S. Hygienic Laboratory, Washington, D. C., before being released for interstate commerce, all lots encountered which have shown evidence of unusual toxicity or deterioration should be reported to the director of the above named laboratory, and with the report should be included several samples of the lot in question in order that a reëxamination may be made of the material. Anna M. Schrade, M.D., Reporter.

LUZERNE—APRIL-MAY

The regular meeting of the Luzerne County Medical Society was held in the Medical Building and was called to order by President N. L. Schappert, April 4, 1923, at 8:40 p. m.

Dr. Albertson discussed several of the bills, which are going before the Legislature in the near future.

Dr. H. B. Gibby spoke on Diphtheria Week, and announced that in this district the week of April 23d to 28th would be designated as "Diphtheria Week." He gave out the plans for getting this subject before the public.

Dr. H. A. Fischer reported for the Committee on "Practice of Medicine and Surgery."

Dr. L. C. Mundy read a very interesting paper on "The Susceptibility to Pneumonia of Patients Operated Upon With Lesions in the Upper Abdominal Region." The paper was discussed by Drs. Trapold, Mengel, Sheridan, Schiefly and Long. Discussion was closed by Dr. Mundy.

On April 18th the meeting was held in the Society Building, and was called to order by President Schappert at 8:40 p. m.

Dr. Drake reported for the Program Committee.

Dr. J. W. Davis announced clinics at the Mercy and City Hospitals on April 30th and May 1st, under the program of the American College of Surgeons.

Dr. E. A. Adams read a very interesting paper on "Skin Grafting." This was discussed by Drs. Ahlborn, Drake and Walter Davis. Discussion was closed by Dr. Adams.

Dr. Lewis H. Taylor spoke briefly about his recent trip to South America, describing the splendid hospitals which they had seen in the various cities.

The regular May meeting was held in the Society Building on the 2d, and was called to order by President Schappert at 8:40 p. m. There were 80 members and three visitors present.

Dr. Drake reported for the Program Committee, announcing that Drs. Jackson and Pike, of Danville, Pa., would read papers before the Society on June 6th.

A communication from Dr. Howard C. Frontz, President-Elect of the State Medical Society regarding a survey of physicians in the rural districts was taken up, and referred to the Committee on Practice of Medicine and Surgery.

Dr. Astley P. C. Ashhurst, Visiting Surgeon to the Episcopal Hospital, and Associate in Surgery in the Medical Department of the University of Pennsylvania, was the speaker of the evening, and gave a very instructive talk on "The Operative Treatment of Fractures," also showing many stereopticon slides of the same.

At a special meeting of the Society on May 9, 1923, Dr. Clark Yeager, State Director International Health Board, and a former member of our Society, gave an interesting talk and showed motion pictures of oriental customs, which was very much appreciated by all the members. H. Irvin Evans, M.D., Reporter.

MONTGOMERY—APRIL

At the April meeting of the Montgomery County Medical Society, Dr. Harry B. Wilmer presented a "Report of a Series of Cases of Asthma, With Special Reference to Diagnosis and Treatment," abstract of which follows:

The purpose of this paper is, if possible, to demonstrate to you how valuable the cutaneous test may be in diagnosing the cause of asthma, and in treating the disease.

The results of a number of experiments by various men show that protein applied to the upper respiratory tract of a sensitive animal irritates the constrictor fibres of the vagus, producing stenosis of the small bronchi by causing a spasm of their circular muscles. The mechanism of a typical attack of true asthma is thus explained.

If the following rules are adhered to religiously, a diagnosis can be made in from 55 to 70 per cent of cases: 1, A thorough and exhaustive history must be taken; 2, the patient should be thoroughly questioned as to previous medical history; 3, a complete x-ray study of the sinuses should be made, especially if headache is a constant symptom; 4, if there are symptoms of nasal obstruction, or if there is constant sneezing accompanying the attack, a thorough nasal and laryngeal examination should be requested; 5, a thorough cutaneous test with all the proteins and pollens should be performed. If a case does not react to any protein or pollen, it has been my practice to classify that case as a bacterial case until proved otherwise.

For the sake of convenience in diagnosis, causes of bronchial asthma may be divided into the following groups: 1, *The thermal type,* in which the patient complains of the attacks occurring upon leaving a warm room and going into the cold, or vice versa; 2, *the chemical type,* in which an attack is developed upon inhaling any pungent odor; 3, *the neurotic and atmospheric type,* in which attacks are precipitated by any emotional outbreak or by any sudden change of atmospheric pressure; 4, *the pollen type,* the cause of which may easily be determined by the cutaneous test; 5, *the animal, epidermal and food protein type;* 6, *the bacterial type,* in which the cutaneous test is negative throughout. There is no doubt in my mind that a bacterial sensitivity may be engrafted upon or may be the direct cause of asthma in any of the foregoing types classified above.

The treatment of the thermal and chemical types is practically the same. If the cutaneous test shows a positive reaction to any of the animal proteins, it is my habit to give first 10 grs. of potassium iodid, t.i.d. for three or four days. An autogenous bacterin is then made and the offending animal protein is injected in ascending doses. If after a period of three or four weeks, there is no sign of relief, the bacterin is given in conjunction with the protein extract every five days. In the pollen type the treatment is the full course of injections of the offending pollen. In stubborn cases of long standing, an autogenous vaccine is made from the sputum or from the nasal mucous membrane, and the bacterin is used in conjunction with the pollen extract injections, with most satisfactory results.

In the protein type where the asthma has been the result of some food protein, the offending food should be immediately removed from the patient's diet. In the animal protein type it is usually customary to remove the offending protein, although desensitization is sometimes employed. I have not had to use a bacterin in the treatment of any of these cases.

In the bacterial type the treatment is not so encouraging, as the results are variable. The patient is given a saturated solution of potassium iodid, and is instructed to take grs. 15, t.i.d., for at least a week. The sputum is then collected and cultured and all organisms showing in the culture are used in making the bacterin. The bacterin is then made up in a dosage of minims, and each minim contains approximately 1 to 2 million organisms. The injections are given every four days, increasing a minim a dose.

In connection with the paper, illustrative cases were described. JOHN C. SIMPSON, M.D., Reporter.

PHILADELPHIA

April 11th

Dr. David Riesman, president, in the chair.

Dr. H. C. Masland: Demonstration of a "To and Fro Bone Saw."—The to and fro bone saw is a part of a general equipment, and consists of a circular saw with an inside guard and an outside guard to regulate the depth of the cut when needed. It is a perfectly safe instrument. The rotating tool will take any rotating instrument which can be attached at the handle.

Dr. Masland also demonstrated splints he devised to appreciate the mechanical supports available above and below the fracture and to utilize them to distribute the strains. These splints are fairly comfortable, and will bring the arm or leg to absolutely normal length. Any structure desired can be built up on the limb, and all splints can be so constructed that the joints can be moved merely by moving the sleeves and marking how far they overlap.

A splint for fractured patellar bones consists of end plates, which are buried in plaster of Paris, and a cross piece which can come down by loosening the screws on the sides. The jaws can be bent in and out to engage but not pinch the patella. When everything is together, it is tightened up, and a piece of adhesive is put between the cross bars to hold them together. The knee joint can be manipulated without disturbance of sensation.

Discussion by Dr. Roberts: Dr. Masland is an expert, and his saw is a wonderful thing. His craniotomy saw is a great success.

Dr. Riesman: Various causes for influenza were assigned during the recent epidemic, none of which have been satisfactory. The work of the Rockefeller Institute has been attracting world wide attention, and Drs. Olitsky and Gates are pioneers in the work, achieving unusual results.

Dr. Peter K. Olitsky: "Investigations on the Bacteriology of Epidemic Influenza."—Dr. Olitsky gave a brief outline of the work done by Dr. Gates and himself during the past four and a half years, in connection with the Rockefeller Institute for Medical Research.

Epidemic influenza is a mild disease, and does not in itself cause fatalities, but reduces the resistance to secondary infections, especially of the lungs, which are invariably fatal. The mode of infection is by human contact, which fact Rosenau and McCoy firmly believe, although they failed in their attempt to convey influenza to normal persons from droplet infection. A complete study of influenza when it first appeared was impossible because of the exigencies of the war, poorly equipped laboratories, inadequate personnel, a misconception of the nature of the disease, leading to the study of pneumonia, and the prejudice in favor of Pfeiffer's bacillus. The latter occurred secondary to other infections, as measles, as often as influenza; is found to be a normal inhabitant of the respiratory tract, and was not found in early cases. The pandemic nature of influenza expostulates a single cause, and its rapid spread would indicate a single factor. The striking features of the disease are the constant leucopenia, affecting the mononuclear types, the increased susceptibility to secondary infections, especially of the upper respiratory tract and lungs, and thirdly, the extreme prostration and subsequent depression.

In September, 1918, work was begun on the hypothesis that the virus was present in the nasopharyngeal secretions. The usual methods of cultivation were hopeless. Filtered and unfiltered nasopharyngeal secretions were injected into monkeys, but the results were untrustworthy since the monkeys were infected with tuberculosis. First experiments with rabbits were failures, the later ones more successful, when the infections were made in the first thirty-six hours of the disease. The rabbits showed leucopenia, a rise in temperature, conjuntivitis, and in the lungs emphysema, edema, hemorrhage, but no consolidation. When cultivation studies were made, definite multiplying organisms were found that corresponded in effect with the nasopharyngeal secretions of influenza.

(Slides were shown to illustrate the growth in the medium, and the effects in the animals, especially the emphysema and edema of the lungs. The organisms are very minute.)

When it came to a question of possible antibody production, the work was handicapped because the media contained protein and antigens besides the organisms. A dialysate medium, used by Noguchi, was accordingly devised. Acidic fluid, containing fresh kidney tissue, was put into a colloidial sac, with distilled water or broth on the outside, sealed with vaseline. Inoculation was made through the seal. Using such media, it was found that rabbits could be immunized. Three repeated injections of killed cultures subcutaneously in rabbits produced antibodies. Agglutination in man is still an experiment. Low titre is expected.

Discussion by Dr. A. C. Abbot: Drs. Olitsky and Gates have to the present time given the most satisfactory etiology for influenza, but it cannot be said they have given the last word. Pfeiffer's bacillus can no longer be taken seriously, as there are too many postulates unsatisfactory. Influenza itself is mild, but

so is scarlet fever if there are sufficient antibodies to destroy the organisms in the throat.

Dr. R. C. Rosenberger: Reference is made to the similarity between influenza and pneumonic bubonic plague. All respiratory organisms have been blamed. Agglutination, precipitation and immunity tests point to a bacteriological body, a microörganism.

Dr. Paul A. Lewis: The organism, if found, will not tell much about the disease, and influenza must long remain a mystery. Why are some cases followed by extremerly fatal pneumonia? The work of Drs. Olitsky and Gates has been exceptionally fine and painstaking, and makes the strongest presumptive evidence of the etiology of influenza we have.

Dr. D. H. Bergey: Are the Pfeiffer bacillus and Dr. Olitsky's organism separate organisms in the same disease? Comparative studies will clear up this matter.

Dr. Olitsky: Three other groups of organisms, about twenty strains, bearing on influenza but not "pneumocintes" have been found. The presumption is that the pathological type is pneumocintes. It is not found in normal throats nor in common colds. Bronchopneumonia is produced instead of influenza by the Pfeiffer bacillus. Our organism never produces pneumonia, and the two are distinct serologically and morphologically.

These reports are objective findings, and are not statements as to the definite cause of influenza. Additional work must first be done, and the interpretation is still open for discussion.

Dr. Fred B. Weidman: "Tumors from Camphorated Oil and Other Oil Injections."—Paraffin has been used for cosmetic purposes, but has been abandoned because of the results of its use in producing tumor-like masses. Paraffin oil will also produce these results, whether hard or soft paraffin is used. The tumors are not genuine neoplasms, but a reaction of the tissues against a foreign body, and are progressive in character. The only treatment is surgical. Proprietary drug houses have been advised of the danger of paraffin oil injection, and saponified oils, cocoa butter, sweet almond, etc., are now available. Syphilitic treatments are as effective if suspended in readily absorbable oils. Paraffin is evidently not a bland, inert substance. Experimental tumors have been produced in monkeys, as definite inflammatory reactions against paraffin oil in the tissues.

In conclusion, since other oils are available, a suspension of insoluble salts should be used only in more absorbable oils.

April 25th

Dr. Philip F. Williams: A Survey of Prenatal Care in Philadelphia, and What We Should Do."—Dr. Williams pointed out on a map the location of prenatal clinics in Philadelphia, showing that some districts, especially the central portion, are over supplied, while others are lacking. There is little zoning in Philadelphia, Mercy Hospital for instance, taking in a large territory, although some districts are well defined. The map showed the necessity for more clinics out towards Torresdale, and for closer rules for zoning in the down town clinics. Dr. Williams also gave statistics to show the result of the work in these clinics. In the last two years there has been a drop in puerperal deaths, but the fatalities in eclampsia are not less than in 1911, probably because of the poor facilities for delivery. Toxemia is preventable if recognized, and the patient should be seen frequently, and more routine blood-pressure taken. An early physical examination should be made, with pelvic measurements, and the urine and blood-pressure taken regularly. A Wassermann might be taken in suspected cases. The nutrition and diet of the patient together with the hygienic conditions of the home should receive careful consideration.

Dr. Harriet C. Hartley: "A Study of Prenatal Care in Philadelphia from the Point of View of Child Welfare Organization."—The Welfare and Hygiene Organization has a prenatal program for reducing infant mortality, and a survey is made each year to ascertain the work of prenatal clinics, Thirty-five per cent of private physicians give prenatal care. Statistics of three maternity hospitals in the city, which give full prenatal care, show a mortality of forty per ten thousand cases, and those fatalities were almost all emergency cases, unknown until labor. Private physicians are showing more interest in their cases, and frequently seek the coöperation of prenatal agencies. Midwives, too, have more desire to coöperate with health centers each year. In the prenatal areas, there are fifteen per thousand cases of infection, while in the city at large there are thirty per thousand. The rate of stillbirths in prenatal areas is one-half that of the city at large. Mortality rates would decline if there were proper registration of births and stillbirths, better facilities for trained nursing care during the puerperium, and education of the pregnant woman.

Discussion by Dr. J. O. Arnold: Dr. Hartley's last remark is the keynote of the problem, it is a matter of education and development of interest in all phases of society, and must not be left to the physician, women's clubs have the force, means and talent necessary to push something like this. Two years ago Dr. Arnold began giving illustrated talks on prenatal work before women's clubs in the city, trying to introduce two ideas; the need for more maternity hospitals or a large maternity building as a center for education, and the establishment of definite motherhood centers in various sections for instruction on a smaller scale. One club in particular has taken this up.

Dr. C. C. Norris: With Dr. Landis we started one of the first prenatal clinics in the city at Phipps Institute fifteen years ago, which has developed considerably. Prenatal work aims to ascertain the cases with contracted pelvis, malpositions, and toxemia; to educate the mother as to her own care and care of the child; and to lessen infant mortality. Mothers are followed three months after delivery, and the child for five years. Social service workers are carefully selected.

Dr. Collin Foulkrod: Prenatal work is weak when it comes to delivery, because of the difficulty in getting nurses in private homes, although the majority of cases can be safely cared for at home. It is hard for the general practictioner to give detailed attention to his maternity cases.

Dr. Boyd: Appreciable advance and progress is being made, but there is still more to do. The community must work more and more with the physician.

Dr. Williams: Those in charge of prenatal clinics should take to heart the remarks about the zoning of the city. The death rate from puerperal infection has not dropped since the time of Dr. Holmes, and greater efforts, time and study are required.

Dr. Ellen C. Potter: "The Relation of the Department of Public Welfare to the Physicians."—The Department of Public Welfare is not a new thing, but the combination of the State Board of Charities, Administration of Private Philanthropies, and the Mothers'

Assistance Fund. One new thing has developed through the power invested in the State Board of Charities—the problem of the delinquent child, prison industries, and supervision of the penal institutions of the state. The Department is related to physicians in regard to the hospitals of the state, and in the field of mental health. For fifty years Pennsylvania has been committed to a policy of financial assistance to private philanthropies, since it began to care for the orphans of the Civil War. The use of the appropriations has become political and not philanthropic, and the state institutions have been starved at the expense of private organizations. Governor Pinchot insists that all departments operate as part of the Administration, and any wish that might hurt progress elsewhere must be abandoned.

An attempt is made to carry out this administration policy. The actual cut in appropriations is thirty per cent. Some hospitals have been receiving thirty cents a day and others fifteen dollars a day for treatment, and a fairer method of reckoning must be devised. Pennsylvania's gifts to private philanthropies are outside the real function of the state, and are by grace, not by right.

Pennsylvania has not developed a program of mental health, and more mental health clinics must be established. By advice to local physicians and visits of psychiatrists, eighty to ninety per cent of the feeble-minded and insane can be taken care of outside of institutions.

Discussion by Dr. J. C. Doane: The question is whether the care of the indigent sick and poor is the responsibility of the state. Hospitals never can run on their own income, and it is the patient who suffers in the last analysis. There is often lack of economy in hospital management, supplies, etc. The withdrawal of appropriations should be more gradual, giving the hospitals a chance to adjust their finances.

Dr. Owen Copp: There is a new spirit and attitude pervading the old machinery, and attention is focused on prevention, cure and treatment. The physician is the basic factor in welfare work. It is an obligation of the state to see that every dependent person is rendered necessary aid, and the state owes an enormous debt to private philanthropies for finding the need, seeing how it can be met, and passing that on to the state.

Dr. Henry D. Jump: There is little difference whether the indigent poor are taken care of in state or private institutions. If the latter had no need of funds closer lines might be drawn. Although there is a crying need for care of the insane, "the poor we have with us always," and must be taken care of. The institution of per diem appropriations is business efficiency. Social welfare and the physician are linked interchangeably.

Dr. Roberts: Governor Pinchot is trying to correct the appropriation of money where it is not needed or not deserved.

Dr. F. Hurst Maier: Report of Committee on "The Study of the Nursing Situation in Philadelphia."—Dr. Maier spoke of the difficulties encountered by the committee, and gave their findings, with several recommendations. He suggested greater use of the Visiting Nurse Society; a plan of group nursing; the annual registration of nurses, with the understanding that nurses will accept any call to service; and the idea of using licensed attendants.

A. R. WINTER, Reporter.

SOMERSET—MARCH.

The Somerset County Medical Society at the March meeting had the honor and pleasure of hearing Dr. Lawrence Litchfield, President of the Medical Society of the State of Pennsylvania, who addressed us on the subject of influenza.

The rank that Dr. Litchfield held as a surgeon during the World War and the reports of his many subordinates, enable him to speak and teach about influenza as few others can.

He told us of the suddenness and severity of the attack. A person may be well at the moment, and sick and in the hospital in an hour. There may be one case to-day, a hundred to-morrow, and hundreds and thousands in a week. During the War it came almost like an avalanche. The Doctor and his sixty-odd subordinates were nonplused and their ability over-taxed.

Postmortem examinations disclosed the fact that any vital organ might be involved, but that by far the most fatal and most frequent involvement was of the lungs. Nevertheless the Doctor saw very few cases in which true pneumonia occurred. This was indeed a revelation to most of us.

If anyone knows influenza from A to Z, we think Dr. Litchfield is that man. As to treatment he said it seemed that the best that could be done was but little—to put the patient to bed and treat complications as they arise.

The discussion of the subject was shortened on account of lack of time, but many questions were asked, to which the Doctor made satisfactory replies.

H. C. MCKINLEY, M.D., Reporter.

SUSQUEHANNA—MAY

The Susquehanna County Medical Society held its annual meeting in the Public Library at Montrose, Pa., on May 1st. The business meeting was called to order at 11:00 a. m. by the president, Dr. A. E. Synder, of New Milford, Pa. After the regular routine of business, the following officers were elected for the ensuing year: President, Dr. D. J. Peck, of Susquehanna; vice-presidents, Dr. H. W. Trimmer, of South Gibson, and Dr. A. S. Blair, of Hallstead; secretary-treasurer, Dr. E. R. Gardner, of Montrose; censor, Dr. Caterson, of Montrose, reporter, Dr. Robert D, Mackey, of Montrose; and district censor, Dr. W. J. Condon, of Susquehanna.

At 2:30 p. m. a public meeting was held on the subject of Toxin-Antitoxin. This was conducted by Drs. Wm. R. Davies, Geo. A. Clark and D. E. Berney, all of Scranton. The meeting was well attended by both the medical profession and the laity and the subject was well presented, so that both the laity and the medical profession were much better informed about the Schick test.

The Scranton doctors were given a vote of thanks for their instruction and the meeting adjourned.

H. D. WASHBURN, Reporter.

WARREN—MARCH-APRIL-MAY

The members have met according to the program during March, April and May.

The March meeting was held at Dr. Frantz's residence on March 19th and was addressed by Dr. Clancy, who explained a few of the useful tests for kidney function. The phenolphthalein test was demonstrated. The dinner provided by Dr. and Mrs. Frantz was a most bounteous one and was heartily enjoyed.

The April meeting was held at the Elks Club, April 16th, and Dr. Briggs described a condition known as "pylorospasm which occurs in infants." It is not a stenosis. It is more apt to be found in artificially fed infants. Vomiting is explosive and painful, muscles rigid. There is a neurotic inheritance, stools scanty. Treatment consists of regulation of diet, low fat, high protein, or lime water added to human milk, and use of atropin before feeding, 1-1000, washing out stomach, if necessary, and giving albumin milk dextro maltose mixture through a tube.

Arranged by Dr. Robertson, a Pasteur meeting was held May 4th in the Presbyterian Church. Dr. Joseph McFarland, of Philadelphia, was the speaker provided, and he held the attention of the audience to the end. Professor McFarland was tendered a dinner previous to the lecture by the U. of P. alumni, of Warren, to which the Medical Society was invited.

The May meeting of the Society was held May 21st at the Elks' Club with 14 members present. Dr. Apica gave a résumé of the chief organic extracts and their value in medicine. He cited the statement that insulin, the latest of the group, had been found beneficial in youthful diabetics, the group that heretofore gave the worst prognosis. He also said that the hypodermic injection of organic extracts seemed to give better results than oral administration. While the claims of the commercial pluriglandular exponent must be taken with many grains of salt, some capable clinicians have found good results from some combinations of gland extracts.

Dr. Condit took up the subject of hyperthyroidism and gave a very comprehensive review of the latest forms of treatment. Surgery seems to offer most help when applied early. While basal metabolism is always increased in genuine hyperthyroidism, it coincides pretty regularly with increased pulse rate and increased pulse pressure. With these two factors known, a formula can be used which in the absence of metabolic estimates will give practical data. Dr. Briggs was host of the meeting.

M. V. Ball, M.D., Reporter.

WESTMORELAND—MARCH.

Friday, March 20th, was declared a general field day for the men of the medical fraternity of Westmoreland County, and the exodus to Greensburg was general in the ranks of the profession of the county and its coworkers from near and far.

Drs. W. Wayne Babcock and Thomas McCrae, of Philadelphia, presided singly and jointly in the presentation of abundant and interesting clinical material at the Westmoreland Hospital from two to five in the afternoon, before some three hundred assembled physicians.

Exceedingly minute and well prepared histories were in possession of all present and it was an abundant pleasure to the assembled audience to follow the paths of these master minds in their presentation of both near and remote trends in consideration of the cases in hand.

After an intermission of one hour, a change of location was made to the Penn Albert Hotel, where a delectable dinner was served to the accompaniment of excellent music and good fellowship.

With chairs pushed back from the table and smoke curling to the ceiling, good time number three was ushered in, and ensued an hour's speech and merry-making. Dr. McCrae spoke on "Modern Medicine," Dr. Babcock on "Resuscitation in Somatic Death," and Dr. Robert Armstrong, of West Virginia, alternately jollied and stung his audience under a heading of "Medical Humor." Mr. Albert Bell, respected member of the Westmoreland County Bar, on the subject of "Professional Ideals" was most enthusiastically received.

It was a bang-up big day, speaking medically, and crammed full of the very best things pertaining thereto. Not the least of its manifold pleasures was that of the meeting of old friends—friends too seldom seen. Allegheny County—which means Pittsburgh—and Fayette County to our south sent packed and welcome delegations that we were pleased and proud to entertain. D. Allison Walker, Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

The four year old son of Dr. Harvey A. Price, of Port Carbon, was killed by an automobile on May 16th.

Mrs. Mary Elizabeth Welch, of Philadelphia, widow of Dr. William M. Welch, the widely known small-pox expert, died April 28th at the age of 83.

Dr. Calvin C. Dibert, of Bedford, who was graduated from Columbus (Ohio) Medical College in 1884, died on March 28th, aged 62 years.

Mrs. Josephine Farrell Garvey, wife of Dr. T. Q. Garvey, of Lancaster, died of pneumonia on April 24th. She is survived by her husband and five sons.

Dr. Henry N. Speer, of Philadelphia, died on April 19th. He was a graduate of Jefferson Medical College of Philadelphia, class of 1893.

Dr. William E. Metzger, of Alvira, aged 73 years, died on April 27th, following a long illness. He was a graduate of the University of Pennsylvania School of Medicine, class of 1874.

Dr. John L. Ireland, of Erie, died suddenly on April 11th, of heart disease. Dr. Ireland was born in 1870 and was graduated from Hahnemann Medical College and Hospital of Philadelphia in 1893.

Dr. Isaac W. Riggs, of Pittsburgh, who was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1869, died on April 9th, aged 76 years.

Dr. James W. Parshall, of Uniontown, aged 60 years, died on April 14th of pneumonia. Dr. Parshall was a graduate of the University of Maryland School of Medicine, Baltimore, class of 1887.

Dr. William W. Stevens, of Philadelphia, aged 62 years, died suddenly on April 21st of heart disease. He was graduated from Ensworth Medical College, St. Joseph, Mo., in 1892.

Mrs. Barbara Blecher, wife of Dr. J. F. Blecher, of Middletown, died on May 1st from a complication of diseases. She is survived by her husband, one son, Dr. D. B. Blecher, of Fleetwood, and one daughter, Mrs. Ralph Meckley, of Atlantic City.

Dr. Mercer R. Girvin, of Mount Nebo, who was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1893, died on April 25th at the Lancaster General Hospital, aged 54 years. He is survived by his wife and one son.

Dr. William H. H. Githens, of Philadelphia, aged 82 years, died on March 24th following a long illness. Dr. Githens was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1866. He was a member of the College of Physicians and Surgeons, of Philadelphia; and was formerly president of the Obstetrical Society of Philadelphia.

DR. HORACE H. COWLES, of Lander, aged 70 years, died on April 15th of influenza and pneumonia. Two years ago he retired from active practice after an attack of hemiplegia, and since that time had never fully recovered his health. Dr. Cowles was graduated from the Medical Department of the University of the City of New York, in 1887. He is survived by his wife, three daughters and one son.

DR. WILLIS MATHER BAKER, of Warren, died on April 21st, of pleurisy, at the age of 66 years. Dr. Baker was a graduate of the University of Buffalo (N. Y.) Department of Medicine, class of 1878. For forty-two years he followed the practice of medicine and surgery in Warren, and during thirty years of that period was local surgeon for the Pennsylvania Railroad. He served several years as president of the Warren County Medical Society, and was at one time trustee of the Medico-Chirurgical College of Philadelphia, of Niagara University at Buffalo and of the Buffalo Medical College. He is survived by his widow and a son and daughter to his first wife.

DR. A. D. TEWKSBURY, of Tunkhannock, an honorary member of the Wyoming County Medical Society, died at the Peoples' Hospital, Sayre, on May 2d, in his 86th year. Dr. Tewksbury was graduated from the University of Michigan Medical School, Ann Arbor, Mich., in 1864. After his graduation he enlisted as a surgeon and served throughout the war, having been present when Lee surrendered. Some years after the war he went abroad to specialize on the eye, ear, nose and throat, attending clinics in London, Paris and Vienna, and finishing at Edinburgh. Besides his wife, he is survived by one son, Dr. Walter B. Tewksbury, and two brothers.

DR. FRANCIS HAMMER ELDER, for many years a practicing physician of Overbrook, died at his home on May 9th. Dr. Elder was born in Blairsville in 1859 and was graduated from the University of Pennsylvania School of Medicine in 1881. For a year after his graduation he held the post of Assistant to Professor Francis C. Wilson at the Jefferson Medical College. He was then appointed chief of the Gynecic Clinic at the Polyclinic Hospital and later served at the Southwestern Dispensary. In 1894 he resigned to take up private practice. He was a member of the Archeological Society of the University of Pennsylvania and the Historical Society of Pennsylvania. His widow survives him.

BIRTHS

BORN TO DR. AND MRS. JAMES C. BOYLE, of Butler, May 5th, a son, Wilmer Dean Boyle.

BORN TO DR. AND MRS. JOHN A. WEIERBACH, of Quakertown, on May 8th, a daughter, Janet May Weierbach.

DR. AND MRS. JOHN E. LIVINGOOD, of Reading, announce the arrival of a daughter at the Reading Hospital on April 21st.

ENGAGEMENTS AND MARRIAGES

THE ENGAGEMENT of Miss Florence Lebzelter to Dr. George W. Stoler, both of Lancaster, was recently announced.

DR. CHARLES S. DUTTENHOFER, of New Holland, formerly of Lancaster, and Miss Mary Hyman, of Churchtown, were united in marriage on April 25th.

MR. AND MRS. WILLIAM CAIRNS GRAY, of Merion, announce the engagement of their daughter, Miss Mabel Eleanor Gray, to Dr. Benjamin A. Thomas, of Philadelphia.

ANNOUNCEMENT HAS BEEN MADE of the engagement of Miss Katherine Smoot, of Baltimore, Md., to Dr. W. Minster Kunkel, of Harrisburg. Their marriage will take place this month.

THE WEDDING of Miss Mary C. Fiero, daughter of Mrs. S. E. Fiero, and Dr. Joseph Evans Sands, son of Mrs. A. J. Cadwallader, of Yardley, will take place on June 12th at the bride's home at Newtown Square.

DR. AND MRS. CHARLES C. COCKLIN, of Harrisburg, have announced the engagement of their daughter, Miss Miriam Cocklin, to Dr. Charles B. Fager, Jr., son of Dr. and Mrs. V. H. Fager, also of Harrisburg. The marriage will be solemnized in June.

ITEMS

DR. JAMES M. ANDERS, of Philadelphia, is recuperating after a long siege of illness.

DR. FRANK C. HAMMOND, of Philadelphia, recently spent a most enjoyable week in his old home town in Georgia.

DR. AND MRS. R. M. ALEXANDER, of Reading, who were recently married, have returned from their wedding trip.

DRS. G. A. POUST, of Hughesville, and J. F. Gordner, of Montgomery, are in Chicago, taking a postgraduate course.

COL. R. C. LOVING, of the Medical Corps, U. S. Army, has resigned from active service and will take up the practice of medicine in Philadelphia.

DR. C. L. FURBUSH, Director of Public Health, Philadelphia, is slowly recovering from an attack of vertigo sustained some weeks ago.

DR. EUGENE J. ASNIS has resigned the Chair of Pathology and Bacteriology in the School of Medicine of Temple University.

DR. E. D. SARKIS, of Persia, who was very active in medical matters in that country during the World War, is in this country for the present to arrange for the education of his children.

DR. JUDSON DALAND, of Philadelphia, read a paper at the annual meeting of the American Climatological and Clinical Association held in May at Niagara Falls, Ontario.

DR. COLLIER F. MARTIN has resigned the Chair of Proctology in the School of Medicine, Temple University, and Dr. Harry Z. Hibshman has been advanced to Clinical Professor of Proctology, in charge of the department.

DR. JOHN A. CREWITT, of Newtown, suffered for the second time in less than a year, a severe loss by fire. The fire started in his office and destroyed everything there, and later a greater portion of the building was ruined.

DR. GEORGE E. DE SCHWEINITZ, President of the American Medical Association, delivered the Bowman Lecture in London, England, in May, 1923. Dr. de Schweinitz will return in time to preside at the A. M. A. meeting in San Francisco.

THE BOARD OF CORPORATORS of the Woman's Medical College of Philadelphia recently announced the appointment of Dr. Lida Stewart Cogill as professor of obstetrics, to succeed Dr. Alice Weld Tallant. The board also announced the appointment of Dr. R. Max Goepp as professor of medicine.

GROUND HAS BEEN broken and active arrangements are under way for the construction of a $300,000 wing for the Samaritan Hospital, Philadelphia. The plans contemplate the construction of two additional units which will afford a large increase in available beds for teaching purposes of the Medical Department of Temple University.

THE BOARD OF DIRECTORS of the Philadelphia County Medical Society has appointed a committee, of which Dr. John F. Roderer is chairman, to prepare suitable articles on medical, hygienic and sanitary topics to be broadcasted by radio through the Strawbridge & Clothier WFI station. As a rule these talks will be given on Saturday evenings at eight o'clock during the month of June.

The state-wide extension postgraduate course in medical education being conducted by the Medico-Chirurgical College, Graduate School of Medicine of the University of Pennsylvania, in coöperation with the Medical Society of the State of Pennsylvania, is at present conducting successful courses in Sayre, Pa., using the Robert Packer Memorial Hospital, and in Schuylkill County, using the Fountain Springs Hospital for teaching purposes.

The Board of Trustees of the University of Pennsylvania has decided that

"Beginning with the year ending June 30, 1923, the Dr. Spencer Morris Prize, established by a bequest under the will of Dr. Spencer Morris in the former Medico-Chirurgical College, shall be awarded as a prize to a student physician in the Medico-Chirurgical College and Hospital Graduate School of Medicine in the University of Pennsylvania, who shall receive the degree of Master of Medical Science at the annual commencement, and who, in the opinion of the Dean of the said Graduate School of Medicine, has shown the highest scholarship among those receiving the degree of Master of Medical Science, and who will further undertake to continue his studies in the said Graduate School of Medicine as a candidate for the degree of Doctor of Medical Science in the said Graduate School of Medicine, the prize to be paid to such student physician in ten equal monthly installments from the time when the third year candidacy actually begins and continues."

NEW AND NONOFFICIAL REMEDIES

Tincture No. 111 Digitalis—P. D. & Co.—A fat-free tincture of digitalis which, standardized by the minimum lethal dose frog heart method of Houghton, is 50 per cent stronger than tincture of digitalis—U. S. P. The actions and uses of tincture No. 111 digitalis—P. D. & Co. are the same as those of tincture of digitalis. It was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. This claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis. To minimize deterioration through light and air, the preparation is marketed in one ounce amber vials and saturated with carbon dioxide. Parke, Davis & Co., Detroit, Mich. (*Jour. A. M. A.*, April 7, 1923, p. 1003).

Borcherdt's Malt, Cod Liver Oil and Iron Iodide.—Each 100 Cc. contains ferrous iodide 0.88 Gm. (4 grains per fluidounce), cod liver oil, 25 Cc. and Borcherdt's malt extract (plain) 75 Cc. Borcherdt's Malt Extract Co., Chicago (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Carbon Tetrachloride Medicinal.—Carbon Tetrachloride has narcotic and anesthetic properties somewhat similar to those of chloroform. It has recently come into use as a vermifuge in the treatment of hookworm disease. It also removes some intestinal parasites other than the hookworm. It is reported that usually about 95 per cent of the hookworms are removed by the first dose. Its use appears to be relatively safe, but serious symptoms and even death have been reported. It is administered in water, milk or gelatin capsules on an empty stomach, followed by a purgative dose of magnesium sulphate.

The dose is from 2 Cc. to 3 Cc. (30 to 45 minims) for adults. Carbon tetrachloride is a heavy liquid, having an odor somewhat like that of chloroform. It is almost tasteless and almost insoluble in water.

Carbon Tetrachloride Medicinal—M. C. W.—A brand of Carbon Tetrachloride Medicinal—N. N. R. Mallinckrodt Chemical Works, St. Louis.

Carbon Tetrachloride C. P.—P. W. R.—A brand of Carbon Tetrachloride Medicinal—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Modified Pneumococcus Vaccine.—A vaccine or "antigen" prepared by digesting a suspension of pneumococci, types I, II, III and Group 4 at 37 C. until about 95 per cent of the organisms have become gram-negative and the mixture is relatively nontoxic to guinea pigs. It is believed that this method yields a vaccine with greater protective power. There is some evidence that this vaccine is of value in the treatment of lobar pneumonia. It is not intended for prophylactic use.

Pneumococcus Antigen-Lilly.—A modified pneumococcus vaccine—N. N. R.—It is marketed in 5 Cc. vials, each Cc. containing twenty billion partially autolyzed pneumococci. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Sulpharsphenamine-Squibb.—A brand of sulpharsphenamine—N. N. R. (See *Jour. A. M. A.*, March 31, 1923, p. 919.) It is supplied in ampules containing respectively, 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., and 0.6 Gm. E. R. Squibb & Sons, New York City (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Neo-Silvol.—A compound of silver iodid with a soluble gelatin base containing 18 to 22 per cent of silver iodid in colloidal form. Neo-silvol, even in concentrated solutions, causes neither irritation of mucous membranes nor coagulation of albumin. It does not stain the skin. It is claimed that neo-silvol in laboratory tests for germicidal value has been found as effective as phenol in its action on bacteria. Neo-silvol is intended for the prophylaxis against, and treatment of infections of accessible mucous membranes and is claimed to be indicated in affections of the genito-urinary tract and of the eye, ear, nose and throat. Parke, Davis & Co., Detroit, Mich. (*Jour. A. M. A.*, April 28, 1923, p. 1218).

Phenoltetrachlorphthalein—H. W. & D.—A dibasic dye formed by the condensation of phenol and tetrachlorphthalic acid or its anhydride. Phenoltetrachlorphthalein has been used for the determination of the functional output of the liver. It can be used, *in the form of the sodium salt,* intravenously; but cannot be given subcutaneously or intramuscularly. The substance may also be obtained in the form of Ampules Phenoltetrachlorphthalein containing a solution of disodium phenoltetrachlorphthalein. Hynson, Wescott & Dunning, Baltimore, Md. (*Jour. A. M. A.*, April 28, 1923, p. 1218).

Sulpharsphenamine-Abbott.—A brand of sulpharsphenamine-N. N. R. It is marketed in ampules containing respectively, 0.2 Gm., 0.3 Gm., 0.4 Gm., and 0.6 Gm. The Abbott Laboratories, Chicago. (*Jour. A. M. A.*, March 31, 1923, page 919.)

Diphtheria Toxin-Antitoxin Mixture—Lilly.—A diphtheria toxin-antitoxin mixture (see *New and Nonofficial Remedies*, 1922, p. 282), each Cc. constituting a single human dose and containing 3 L+ doses prepared in accordance with the requirements of the U. S. Public Health Service. Marketed in packages of three vials sufficient for one treatment. Eli Lilly & Co., Indianapolis, Ind.

PROPAGANDA FOR REFORM

Ethylene as an Anesthetic.—The Council on Pharmacy and Chemistry has published a preliminary report on the experimental status of ethylene as an anesthetic. A. B. Luckhardt and J. B. Carter report

that animal experiments with ethylene indicate that ethylene has a direct action on the nervous system when a concentration of 90 per cent is used; that the motor reflexes are abolished at this concentration, and that the phenomena produced by the undiluted gas are partly asphyxia, which factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. Trials carried out on human subjects appear to confirm the anesthetic value of ethylene. The investigators believe that ethylene will be found more desirable than nitrous oxid, but the experiments reported have been carried out on persons in normal health only. The Council reports that confirmation of the work is necessary before ethylene can be admitted to New and Nonofficial Remedies, but that further research with the gas is warranted. As a preliminary to such research, the Council cautions that the quality of the product must be determined (*Jour. A. M. A.*, April 7, 1923, p. 1003).

Zonite.—Zonite is advertised as a new and wonderful discovery based on the "Carrel-Dakin" solution. The propaganda is, in effect, a capitalization of the work of Carrel-Dakin and others. Chemically Zonite, after dilution with an equal quantity of water, is claimed to be essentially the same as Surgical Solution of Chlorinated Soda (Carrel-Dakin) of New and Nonofficial Remedies.

Zonite has been exploited to both physicians and the public (*Journal. A. M. A.*, April 7, 1923, p. 1024).

Owl Enamel Toilet Cream.—This preparation, manufactured by the Owl Drug Co. (Kansas City, Mo.), is sold for the alleged purpose of "Beautifying the Complexion and Rendering the Skin Soft and Velvety." Dr. Henry W. Woltman, of Rochester, Minn., has reported a case of lead poisoning in a woman who had been using Owl Enamel Cream. The A. M. A. Chemical Laboratory analyzed the product and found it to be composed essentially of lead carbonate, calcium carbonate and glycerin. The indiscriminate sale of a preparation of this sort is not merely a menace to the public health but a commentary on the laxity of our laws. It is notorious that certain salts of lead have for years been responsible for cases of chronic lead poisoning, due to their employment in cosmetics. In spite of this any concern, responsible or irresponsible, can sell for indiscriminate use a cosmetic loaded down with poisonous ingredients (*Jour. A. M. A.*, April 7, 1923, p. 1022).

Alcohol and Disease.—Recently a statistical report regarding the possible influence of alcohol on the prognosis of pneumonia in a large municipal hospital has been published. The data for nearly 3,500 cases of lobar pneumonia showed that, with reference to the patient's habits of indulgence in alcoholic drinks, that the mortality was higher in moderate users than in light users or abstainers, and that the mortality is much higher in excessive users than in moderate users. It must be borne in mind, however, that these statistics have no bearing on the use of alcohol in therapy (*Jour. A. M. A.*, April 7, 1923, p. 1007).

Incompatibility of Mercurochrome-220 Soluble with Local Anesthetics and Alkaloids.—An accident from precipitation of mercurochrome-220 soluble by procain has been reported. The A. M. A. Chemical Laboratory has confirmed the incompatibility. The following local anesthetics were found to give precipitates when treated with mercurochrome-220 soluble solution: alypin, apothesin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain. Many vegetable alkaloids were also found to be incompatible with mercurochrome-220 soluble (*Jour. A. M. A.*, April 14, 1923, p. 1091).

Glyco-Pepto Milk Not Admitted to N. N. R.—The Council on Pharmacy and Chemistry reports that Glyco-Pepto Milk is a sour milk said to contain Bacillus bulgaricus, Streptococcus lacticus and Glycobacter peptolyticus. The preparation is marketed by the Glyco-Pepto Manufacturing Co., Long Island City, N. Y., with the claim that its administration supplemented with a potato diet through the presence of Glycobacter peptolyticus permits the implantation of the Bulgarian bacillus in the lower intestine and thus brings about an almost complete disappearance of phenols and indoxyl from the urine. The Council reports that Glyco-Pepto Milk may be a pleasing beverage and light food, but that there is no acceptable evidence for the many therapeutic claims that are made for it. The Council declared the preparation inadmissible to New and Nonofficial Remedies (*Jour. A. M. A.*, April 21, 1923, p. 1165).

Nephritin (Reed and Carnrick) was reported on by the Council on Pharmacy and Chemistry in 1907. The following is a summary of this report: The advertising claims for Nephritin are based on the theory that certain granules in the renal cells, called "grains of segregation" and claimed to have been observed microscopically, carry on the secretion of urinary constituents and that a deficiency of them is the cause of nephritis. While Renaut, who formulated the theory, recommended as a cure for nephritis the maceration of fresh kidneys in physiologic sodium chlorid solution, Reed and Carnrick urged objection to the maceration and explained that nephritis represents all the action of the maceration, but is fifty times as potent. Nephritin is stated to be "the grains of segregation from the cortex of the pig's kidney, the renal connective tissue being eliminated." It appeared impossible that the microscopic structures claimed to be present in nephritin could be isolated as such from the connective tissues, and, on inquiry by the Council, no information on this point was to be had. Further, the firm presented no evidence for the claimed action of nephritin or for the claim that it was fifty times stronger than the maceration (*Jour. A. M. A.*, April 21, 1923, p. 1167).

The Treatment of Syphilis.—The general view is that neither mercury or arsphenamin positively cures in cases in which the disease has existed long enough to become well established as a systemic disease, but that they both tend to cure and that both are valuable in treatment. It is the general opinion of syphilologists that when chancres are seen that are unmistakable, these cases should be vigorously treated and that there is a good chance of aborting the disease at this time. If early cases are not treated until the Wassermann reaction has become positive, there is a difference of opinion as to treatment. There are syphilologists who believe that these early cases are better treated by mercury alone until the patient has had an opportunity to develop all the immunity of which he is capable. After the patient has established all the resistance of which he is capable, these syphilologists would treat with mercury and arsphenamin. It is becoming increasingly apparent that the advantages of the new method of treating syphilis in which arsphenamin plays the larger part, are by no means certain. The trend of the last few years has been in the direction of placing more reliance on mercury and the older methods in the treatment of syphilis (*Jour. A. M. A.*, April 21, 1923, p. 1167).

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

PERNICIOUS ANEMIA*

JOHN W. JAMES, M.D.

DOVER, DEL.

It has always been the custom for the President of the Medical Society of Delaware to read a paper before that body, and so to-day I am going to attempt to follow that custom, realizing fully how difficult it is to present anything entirely new. So I hope you will pardon me if I repeat things you already know.

The subject I have chosen is pernicious anemia, one of the diseases, like many others, where a man's death warrant has practically been signed, when the condition is recognized, for I am sorry to say we have as yet found no cure for this disease.

Pernicious anemia is defined as being a chronic and usually fatal disease of unknown origin, producing, especially in elderly men, paroxyms of intense anemia and usually degeneration of the spinal cord. Ehrlich described the essential characteristics of the blood, with histological details which his staining methods made possible. Since Ehrlich, no one has materially added to our knowledge of this disease. The malady occurs quite frequently, and about the same in all localities. Like cancer, it seems to be a disease of elderly people, the majority of the cases occuring after thirty-five years of age. It affects women oftener than men. There does not seem to be any predisposing cause; that is, none that we can be sure of.

The evidence found after death points to a powerful poison having acted on the tissues—hemolysis of the blood, patchy degeneration of the cord, and fatty changes in parenchymatous organs. In the early stages of this serious malady there are no distinctive symptoms. The patients cannot even state positively when they began to feel ill. They usually come complaining of general weakness or some symptoms referable to the gastro-intestinal tract, such as nausea, vomiting, dyspepsia, diarrhea, or sore mouth. The nervous system may be the seat of complaints, namely headaches, dizziness, fainting, abnormal sensations in the hands or feet, numbness, tingling, etc. Sometimes, loss of power in the lower limbs takes place early in the disease, irritability, somnolence, lack of power or concentration or energy. The gastro-intestinal and nervous symptoms seem to be the most common in the beginning, but the patient may complain of symptoms referable to the circulatory system, such as dyspnea, edema, palpitation of the heart, etc. Jaundice and hemorrhages may be an early symptom; in fact, the patients may complain of a variety of symptoms.

Some time during the attack the characteristic waxy yellow color is bound to appear, the yellow being so intense that it is sometimes difficult to distinguish from jaundice. The blood always shows a characteristic picture, with the hemoglobin low, but the color index almost always high. This symptom is distinctive, as it seldom occurs in other forms of anemia.

Microscopically, there is marked poikilocytosis. Macrocytes predominate, although microcytes are almost always found. Megaloblasts and normoblasts are also found. Polychromatophilia is always present and is found more frequently than in any other disease.

The treatment of this disease has been disappointing, for we have as yet found no cure. The arsenical preparations seem for a time to help a great many cases. To get results this remedy should be given to the point of toleration. Iron, tonics, fresh air, change of climate, etc., should be tried. In some cases transfusion of blood seems to prolong life. Splenectomy has also been tried, and removal of foci of infection (teeth, tonsils, gall-bladder and appendix). Radium in the hands of some has given good results.

On account of the dearth of cases in my own practice, I hope you will pardon me for referring to the work of others.

J. M. Anders (Tr. Ass. Am. Phys., 1919, Phila., 34, 353-364) says, in regard to transfusion of blood in pernicious anemia:

*Presidential address delivered before the Medical Society of Delaware, Dover, Del., October 9, 1922.

"It is highly probable that transfusion of blood in pernicious anemia owes its beneficial effects principally to the stimulation of the antihemolytic properties of whole blood, possibly also to some extent to its power to increase the activity of the bone marrow.

"A. F., age 65 years, retired merchant, healthy parentage, began to decline in health about March 1st, 1918, growing weak and pale and dyspneic. Anorexia soon was complete and there were belching, abdominal distress, and marked mental hebetude. There was a marked mitral murmur. After three weeks in Atlantic City patient had to be removed to his home. On May 19 blood count showed: Hemoglobin 20% (von Fleischl); erythrocytes 720,000; leukocytes 34,000; differential—polymorphoneculear neutrophiles 72%, small lymphocytes 23%, large lymphocytes 2%, transitional 2%, mast. cells 1%. Marked anicytosis and poikilocytosis, megalocytes predominate; polychromatophilic degeneration; very few erythoblasts.

"Transfusion performed May 24th, 500 c.c. of whole blood being transferred. Later in day patient had a slight chill, rise of temperature and marked restlessness, from which he quickly recovered after injecting several doses of adrenalin chlorid and atropin. June 3d patient had resumed his normal activities. The blood count now showed: Hemoglobin 40%; erythrocytes 2,050,000; leukocytes 5,400. The cardiac murmur had disappeared. Arsenic and iron injections hypodermically, which he had received since transfusion, were discontinued.

"In November, condition good; hemoglobin 70%, erythrocytes 3,280,000 and leukocytes 5,000. January 1, 1919, patient slowly developed a relapse; a little pallor, a little cardiac palpitation, dyspnea and anorexia appeared. January 23d, blood count showed: hemoglobin 60%, erythrocytes 1,700,000 and leukocytes 3,600. March 8th, transfusion was repeated. Almost no reaction followed, but improvement was immediate.

"Both clinical experience and statistical evidence show that it is unwise to wait until the average hemoglobin percentage falls as low as 20%. Evidence exists to show that those examples of the disease which have shown most improvement after transfusion had run a prolonged course, as a rule, while the more rapidly progressive cases manifested a feebler remission.

"Other special methods of treatment have been employed in cases refractory to arsenic and iron therapy, e.g., by the hypodermic use of splenic extract and antistreptococcus and antistaphylococcus serums; but as these have not gained an enviable reputation for themselves, it is unwarrantable to permit them to supercede transfusion of blood, which promises a far better therapeutic effect."

From available literature and personal observation and knowledge of individual cases the author expresses the opinion that the results of splenectomy hardly warrant the operation. The belief that transfusion following splenectomy brings a more steady response than without splenectomy is borne out by experience.

The author feels that the internists and general practitioners should advise immediate transfusion after an assured diagnosis has been made, during the nonquiescent period, since it initiates a prompt remission in at least 56% of the cases. This procedure should be supplemented by appropriate hygienic measures and approved medicaments; and in cases which are refractory to transfusion, the usual medical treatment by arsenic, including salvarsan intravenously and subcutaneous injections of iron, should receive a trial before resorting to other methods of treatment.

H. Z. Giffin (Jour. A. M. A., Feb. 10, 1917, 429), in reporting the treatment of pernicious anemia, says:

"There are definite indications of consistent temporary improvement in a majority of instances, but there is no evidence that splenectomy has cured pernicious anemia. A review of 31 cases of splenectomy for pernicious anemia demonstrates a definite gain in the blood weight and the general condition during the first three months of the postoperative period in 78% of the cases; during the second three months' period, 68% of living patients maintained their gain.

"A consideration of the advisability of splenectomy would seem to be warranted at present, chiefly in young and middle-aged patients of good general resistance, who show evidence of active hemolysis and in whom the spleen is moderately enlarged.

"The estimation of the blood derived pigments in the duodenal contents is valuable in determining the degree of hemolytic activity present at a given time. A comparison of the degree of hemolysis with the severity of the anemia would seem to be indicative of the productive power of the bone marrow.

"Preoperative treatment, especially transfusions, should be employed to influence the general condition of the patients and to improve the characteristics of the blood picture. A polymonophonuclear increase which persists for months, great numbers of normoblasts and a gradual rise in the hemoglobin and red cell count are prominent. The operative risk is increased when the hemoglobin is below 35% and the erythrocyte count less than 1,500,000 cells.

"Postoperative transfusions have not been given as a routine procedure, but transfusions have been successfully employed in postoperative relapse."

W. D. Gatch (Chicago Med. Recorder, 43, 133, 1921), writing on the surgical aspects of pernicious anemia, says:

"Attempts to cure pernicious anemia by surgical methods have been made along three lines:

"1. Since it is generally supposed that a toxin is the factor in causation of pernicious anemia, repeated attempts to cure the condition have been made by the removal of possible foci of infection or toxemia in the teeth, tonsils, gall-bladder, appendix, etc.

"2. Since the spleen plays a definite part in the causation of splenic anemia, as proved by the cure of this disease by splenectomy, this operation has been tried repeatedly as a means of treating pernicious anemia.

"3. Since by the transfusion of blood any anemia can be removed, this procedure has come to be the standard treatment for all grave anemias."

The writer discusses the merits of each of these procedures. That pernicious anemia is caused wholly by foci of chronic infection does not seem probable to him. As for splenectomy, he quotes the words of W. J. Mayo: "The etiology of pernicious anemia is unknown, the early symptoms are indefinite, and by the time the diagnosis can be made the disease is incurable."

"Splenectomy in pernicious anemia does not appear to be based on sound reasoning, and there seems to be no foundation for the belief that splenectomy will cure pernicious anemia. Considering the confusion which so often attends the early diagnosis it seems probable that obscure cases of hemolytic icterus and splenic anemia have been accidentally included in the

pernicious anemia group. Removal of the spleen in such cases has given the impression that splenectomy cures pernicious anemia. In our experience, in the cases in which results were most favorable, the symptoms were less characteristic of pernicious anemia."

The writer uses blood transfusion in treatment of his cases but reports that none of his results are lasting. He believes pernicious anemia an incurable disease by present methods of treatment.

W. J. Mayo (Surg. Clin. N. A., 1:1314, 1921), in an article on Pernicious Anemia, says:

"A case of pernicious anemia in a farmer, age 39 years, came under treatment at the Clinic in 1921. Appendectomy had been performed in 1912 and the patient had had influenza in 1918. Since 1911 he had been troubled with a vague distress in the epigastrium associated with belching. His tongue had been sore at intervals for four years. In the spring of 1920 he had begun to lose color and to feel weak, the hemoglobin had been 38 per cent.

"A blood transfusion before November had only temporary effect; two later transfusions did not relieve him. He had palpitation and dyspnea and lost 7 pounds in weight. The skin was yellow. The spleen could be palpated 3 cm. below the costal margin. The tongue was bald. Achlorhydria was present and a roentgen-ray examination of the stomach was negative. The blood findings were those of anemia.

"The diagnosis was of pernicious anemia, and splenectomy was decided upon because the patient's condition did not improve after four transfusions.

"April 9th, 1921, operation was performed and a large adherent spleen, dark in color, resembling that of hemolytic icterus, and weighing 560 gm. was removed. A transfusion of 500 c.c. was given after operation. The patient's condition improved after operation until June, when symptoms returned. August 11th, 1921, the hemoglobin was 10 per cent and the erythrocytes 750,000. Five transfusions were given. The erythrocytes are now more than 2,000,000 despite an intercurrent bacillary dysentery. He is still under treatment."

It would seem, according to the writer, that "the spleen was not the cause of the pernicious anemia, but rather an agent of destruction, that the formation of erythrocytes was defective, and as one of the functions of the spleen is the destruction of the worn-out corpuscles, these subnormal corpuscles, the best the patient could produce, were unnecessarily sacrificed. The removal of the spleen checked the unnecessary destruction of the blood."

In the first nineteen cases of splenectomy for pernicious anemia in the Clinic three deaths occurred because the patients were already on the down-grade. It should be done while the patient is on the up-grade, following blood transfusion.

A. Waag (Munch. Med. Wchns., 68:677, 1921), on repeated injections of blood in pernicious anemia, says:

"Surprisingly good results have been secured of late by the profession through the use of repeated small doses of whole blood injected subcutaneously in pernicious anemia. Pappenheim recommended the method because it is simple, conservative and free from severe, febrile sequels. Carnot interprets the improvement that follows as due to an increased erythropoiesis of the bone marrow."

The author reports in detail his remarkable success in treating a man, who on admission to the hospital, presented hemoglobin content of blood, 25 per cent, erythrocyte count 285,000, and color index less than 1. After the usual arsenical preparations had failed, he injected subcutaneously into the thigh of the patient 5 c.c. of whole blood taken from the brachial vein of the donor. A like injection was given the following day. The effect was striking. Two days after the first injection there was marked improvement in the patient's general condition. The hemoglobin had risen to 30 per cent and the erythrocytes to 1,500,000. The patient now received twice a week 5 c.c. of blood. In a week the hemoglobin in content had become 35 per cent and the erythrocyte count, 2,000,000. In four weeks the hemoglobin was 55 per cent and the erythrocyte count, 2,600,000. The patient had gained about 13 pounds and felt well. Temperature was normal. The urine was free from albumin, sugar and urobilin. The patient had borne the injections (nine in all, 5 c.c. each) without other manifestation than a slight smarting sensation, which was relieved by hot compresses and ichthyol bandages.

J. C. Ferrier (Brit. M. J., 1:932, 1921), on the Treatment of Pernicious Anemia with Calomel, says:

"Patient was a married woman, 37 years old, with pernicious anemia. There was no hemorrhage to cause it. The complexion was lemon-colored. The number of red corpuscles was about three-fifths of the normal, the color index was above normal (1.25) and there was poikilocytosis. She grew steadily worse in spite of arsenic and other tonics, until she was confined to bed. As she complained of irritation caused by passing uric acid crystals, the arsenic was stopped, and the patient was given two grain doses of calomel, at first twice a week for six weeks, afterwards once a week for another six weeks, and finally once a month. She has kept on with the monthly dose until the present time. Improvement after a few doses of calomel was marked. The uric acid crystals disappeared and the anemia steadily improved.

"With the exception of some red bone marrow tabloids after she began to improve and some soda mixture for dyspepsia, no other drugs were given. At present the patient looks and feels quite well. Diagnosis of pernicious anemia had been made from blood smears."

H. Z. Giffin and T. L. Szlapka (J. A. M. A., 76:290, 1921), on the treatment of pernicious anemia by splenectomy, says:

"This review concerns fifty patients with pernicious anemia for whom splenectomy was performed. All were operated on more than three years ago. The operative mortality was 6%. Ten patients (21.3 per cent) of those who recovered from operation survived splenectomy three years or longer. Five patients (10.6 per cent) of those who recovered from operation have survived splenectomy more than four and one-half years and are still living. The total length of history of these five patients averages almost six years. In addition to the immediate remission which occurred constantly following splenectomy, splenectomy prolonged life in at least 20 per cent of the author's cases. There are no very definite preoperative characteristics of the disease indicative of favorable results following splenectomy. However, in the type of case in which

there is evidence of active hemolysis, the patient shows a more marked immediate improvement.

"Splenectomy may be recommended in pernicious anemia when, in view of all the circumstances, personal as well as medical, the possibility of the prolongation of life appeals to the family and to the patient. Occasionally the operation may be performed to bring about an immediate remission."

In a contribution on the therapeutic value of the intravenous injection of soluble radium salts in the treatment of pernicious anemia and leukemia, F. Proescher (Radium, 7:71, 1916) says:

"Three detailed case reports are given, two of pernicious anemia and one of leukemia treated by intravenous injection of radium salts.

"In *Case 1,* after a diagnosis of pernicious anemia was established, treatment with subcutaneous injections of cacodylate of soda was given for a little over four weeks. Under this treatment the red cells and hemoglobin were markedly decreased. The color index increased to 1.4 from 1.2. The subcutaneous injection of arsacetin was then tried. After the injection, the red cells and hemoglobin increased gradually. After six months of this vigorous arsenic treatment the only result was an increase in red cells and hemoglobin. The red cell aspect still showed degenerative signs, and the leucocyte picture was not influenced at all.

"Twenty days after the last arsacetin injection, the patient received the first intravenous injection of 250 micrograms radium element in the form of radium bromide. After a latent period of approximately six or eight days during which time the red cell count was somewhat lowered, a marked increase in red cells and hemoglobin was noted. During the next six weeks the red cells remained at almost their normal number and once the color index (0.9) was normal.

"The increase must be attributed to the influence of radium upon the erythrocytes, but this extraordinary increase was only temporary. During the next three months the general condition of the patient was good and he returned to work. A blood examination was made at the end of three months and the red cells were found to be considerably decreased, with hemoglobin about normal. Another series of arsacetin injections increased the red cells again, while the hemoglobin still declined. Unfortunately during the next six months the patient did not return to the Clinic. At the end of that time he returned weak and anemic. Further injection of arsacetin and radium were without any influence on the blood picture. But the patient lived almost a year, in spite of the extremely low red cell count, dying finally of exhaustion.

"*Case No. 2* illustrated a kryptotenetic infection (generalized infectious lymphadenitis of unknown origin) with a pernicious anemic blood picture. He was treated with radium only. Five hundred micrograms radium element was given intravenously in all (400 at first; then an addition of 100 micrograms at end of four weeks). The rapid and steady increase in red cells was perhaps supported by radium. The patient is now in fairly good condition, but does not report for further observation.

"*Case No. 3,* one of leukemia, is incomplete."

The following is a report of a case of my own, with an apology for its incompleteness:

This patient lived nearly four years from the beginning of the attack, and as you will see, had the characteristic symptoms of this disease.

Mr. W. H. R., aged 57 years, married, and a farmer by occupation, came to my office April 7th, 1915, saying he was a boilermaker up to eight years ago. Since that time he has been farming. Has had chronic diarrhea off and on for four years. Commenced to feel bad about two weeks ago. Complains of palpitation of heart, shortness of breath, sleeps poorly at night, especially after 1 a.m. Bowels regular, no swelling of feet or face. Heart and lungs normal, pulse 108 and regular. Blood pressure: systolic 130, diastolic 60. Examination of urine, negative. Was put on purely symptomatic treatment and advised to return for a more careful study of his case.

April 16th, 1915, he came to my office, complaining of shortness of breath, aching in left hand and lower limbs, blowing noises in left ear, tongue sore and heavily coated. Gums and ears pale, eyes pearly yellow, skin had the characteristic yellowish discoloration of this disease. Pulse, 90. Examination of his blood showed: Hemoglobin 50%, erythrocytes 2,330,000, leucocytes 6,000. Marked poikilocytosis, macrocytes in abundance, also microcytes and megaloblasts. He was given Fowler's solution gtt. iii t.i.d., increasing 1 gtt. a day till effect, and Blaud's grs. v. before meals, acid hydrochloric gtt. ii, and elix. lactopeptin drachm i every four hours. This treatment varied from time to time as symptoms indicated. He was kept on arsenic in some form the most of the time, with sodium cocodylate in from 3/4 to 3 gr. doses hypodermically, or Fowler's solution by the mouth. He continued to improve on this treatment till his hemoglobin reached 80%, and his general condition became good.

One thing I should like to mention here is that the arsenic was given until he got the full effect. It was even carried further than I intended for he practically shed the skin of the palms of hands and soles of feet. He was able to resume his occupation of farming again about July 16th, 1915, and kept well for ten months. May 22nd, 1916, he returned to my office again, complaining of shortness of breath. The bowels were constipated, pulse normal, tongue slightly coated, very anemic (hemoglobin 35%). He was put back on the arsenic and iron treatment as before, and continued on this treatment till March 16th, 1917.

At this time he developed a mild case of la grippe. He seemed to lose ground for a time and got very weak and anemic, became very yellow, and suffered from shortness of breath on exertion. His hemoglobin varied, sometimes better, sometimes worse, but his general condition kept fairly good, although unable to do much work till January 4th, 1918, when he came back complaining of shortness of breath on the least exertion, and very anemic.

His liver was much enlarged, and he had developed a systolic murmur over apex of heart. His hemoglobin dropped to 25%. Strychnine gr. 1/30 and tr. digitalis gtt. X. t.i.d. were added to the treatment, but his condition gradually grew worse. He had reached the place where all forms of treatment failed to benefit him, but lived on till the fall of 1918, when he succumbed to this disease.

In conclusion, let me emphasize these facts, that in the light of our present knowledge pernicious anemia is an incurable disease, but life may be prolonged under selected treatment.

This has been proved by my own case, where the patient was kept alive nearly four years.

In summing up the treatment of this disease, I would say that arsenic in some form and transfusion of blood are the remedies par excellence. Splenectomy in the hands of such men as the Mayos has seemed to prolong life, although I cannot see where its real value has been proved.

I believe we should pay especial attention to the use of whole blood subcutaneously, as described by A. Waag in the *Munich Medical Journal*, for if this treatment proves to be as good as represented it will open up a new field for the general practitioner, remote from medical centers, who will be able to use this method of treatment without having to send his patients away for institutional treatment, thereby incurring unnecessary expense as well as the absence from his family.

These are important facts for us to consider, for you know how difficult it is for us to get our patients to leave their homes and go to a hospital.

If I have done nothing more in presenting this paper than to remind you of the necessity for us, as medical men, always to keep fighting to prevent the grim destroyer from depleting the ranks of our fellow beings, I have at least accomplished something.

EDITORIALS

THE RETURN TO REASON

Lawmaking in this "land of the free" of ours is a mysterious and wonderful procedure. If you doubt this, sit yourself quietly in the corner of any city council, state legislature, or national congress and watch the inscrutable wheels turn, listen to the unceasing flow of silver-tongued oratory, count the roll calls with most of the members in the cloakroom swapping jokes or spitting tobacco juice against the marble wainscoting; take in all this and more besides, and you will have a true-to-life picture of the great American people ruling themselves. Of course the most of the laws are sheer rot; how could they be otherwise? Can you squeeze blood out of a turnip? No, and you cannot get good laws out of poor legislators. But to discuss the personnel of our legislative halls would take us too far afield.

The thing that impresses us at this particular moment is the baneful effect of some laws, hastily passed, oftentimes voted for by men who feel opposed to the very thing they vote for, poorly constructed, badly written, inconsistent with the present law, and worse still, in violation of the Constitution. The Volstead Act strikes us as one such. By no stretch of the imagination should Prohibition ever have been made a part of the Constitution. This Constitution is to many of us a sacred document, our Magna Carta, our national Bill of Rights, and as such should be let alone. Prohibition by simple enactment of Congress would be just as much a law and just as much (or little) enforced as by constitutional amendment. However, the Supreme Court having ruled that the Eighteenth Amendment as a whole is constitutional, we have no option at present; it is the law, and must be respected. But what a pity that an amendment of only four lines could not be written so that the ordinary mortal could understand it, for the last half of it has been, and will be, a bone of contention for years to come. When Congress said "the Congress and the several states shall have concurrent power of legislation," it started something. What that clause really means, nobody, including the Supreme Court, knows. Some day the Court will be called upon to say what this clause means, and when that day comes we look for something new in the line of judicial pronouncement.

In accordance with the latter half of the Amendment, Congress, in its infinite wisdom, passed the Volstead Act, as the national enforcement bill, and expected the several states to pass the same Act as the act of the several states, making prohibition enforceable by both state and federal officers. But as above said, the Amendment was so wretchedly worded that states meaning to comply with prohibition as far as possible did not know what to do. Some reënacted the Volstead Act as the act of their state, some did nothing, and some played poker with the bill, saw the bet and went them one better. Such a state is Delaware, whose rural voters have seven votes to the city man's one; and whose rural representatives, while making wines for their own consumption, saddled on the state the most bigoted bone dry law in America. And these hypocrites in Delaware are matched in almost every other state. Even the Congress that passed the Amendment originally was reputed to have been composed ninety per cent of drinkers.

The most pernicious thing in the Volstead Act is the part that says, the Secretary of the Treasury, through the Prohibition Director, shall make and enforce suitable rules and regulations. In other words, Congress passed the act and then passed the buck. We take it that when we send our representatives to Washington we send them there to make the laws in toto, and not to delegate that function to some departmental flunkey

or hickville bureaucrat. How long will the American people tolerate government by one man, even though that man be the annointed of Heaven? How long will we suffer some ten-dollar clerk to tell us what we can do and what we cannot do? And how long will we allow some single-track mind to throw us in court or clap us in iail by a mere sweep of the pen or a new regulation? Just so long as we permit it will we be the victims of one-man government; just so long as we elect the present stripe of legislators; just so long as we at home take no interest. After all, we have no right to rail at the bureaucrat; he fattens at the public trough because we let him; he makes his regulations because we let him; he makes his own laws because we send to Washington men too asinine or too lazy to make them for us. This continual delegation of the *legislative* functions to bureaus of the *administrative* departments is the most serious defect in our governmental system, aside from the fact that the government (administration) is all too frequently diametrically opposed to the people (Congress). Would to God we in America had the English system, whereby an adverse note in Parliament means the resignation of the Ministry, so that the government and the people may, theoretically at least, be constantly in accord. But as Kipling says, that is another story.

To get back to Brother Volstead. His bill as a whole has been declared constitutional by the Supreme Court in a decision that lacks much in clarity and conclusiveness, and the regulations under it, made by one of the aforesaid gentlemen, have been enforced with all the vigor possible (which in truth has not been much), and we as a profession have submitted to rules and regulations such as even the wildest advocate of prohibition never contemplated, to the point that we began to wonder if our vaunted freedom meant anything more than the Russian brand after all. More than one of our childhood faiths have been shattered of late—remember Thomas Jefferson's grandiose statement in the Declaration of Independence that "all men are created free and equal"; he didn't believe that any more than we do, for he kept his slaves till his dying day. And we of the medical profession have learned that *we* are not free (and we are not all equal), especially when it comes to the untrammeled practice of our profession. But just when we were about to give up all hope of ever finding a backbone in a medical man, just as we had almost admitted to ourselves that anything could be put over on the doctor and he'd take it, glory be, some of the Yankee medics of Manhattan Isle began to wonder if this slavery of ours to bureaucracy could not be removed. The only way to find out seemed to be by appealing to the courts, and this was done. An association, the Association for the Protection of Constitutional Rights, was formed, with Dr. Samuel W. Lambert, dean emeritus of the College of Physicians and Surgeons of Columbia University, New York, at its head. The remarkable thing about this Association is the fact that nearly all of its members are ardent "dry" men. Funds were raised, and the battle commenced in the United States District Court for the Southern District of New York, before Judge John C. Knox.

Dr. Lambert filed his action in November, 1922, claiming, in effect, that Congress was usurping the function of the physician in limiting the amount of liquor that might be prescribed to any one patient and asking that the State Prohibition Director, the Internal Revenue Department and the United States Attorney's office be restrained from molesting him in his avowed determination to ignore the provision, which he declared was illegal.

Judge Knox has just read a 3,000-word decision upholding his contention of unconstitutionality and granting the injunction asked.

Although, he said, the question of whether liquor is a valuable therapeutic agent is so highly controversial that a questionnaire directed to 30,000 physicians has resulted in a 51-to-49 vote in favor of the use of liquor in certain cases, Congress itself, "in the very legislation under attack," had recognized it as having a legitimate medical use.

"The difficulty," he continued, "is that having done so, Congress, without reference to the quantity of liquor actually required for the proper treatment of a particular ailment, and irrespective of the good faith, judgment and skill of the physician in attendance, proceeds to limit the amount to be prescribed to not more than a pint within a period of 10 days.

"The Eighteenth Amendment was designed to bring about the prohibition of intoxicating liquor for beverage purposes and was not, I think, intended to put an end to the use of liquor for purposes regarded by those who proposed the amendment and by many of the states that ratified it as justifiable and proper."

Such uses, he said, included its use for sacramental purposes, for medical purposes and for industrial purposes, pointing out that no limit had been placed on the amount that might be used for sacramental purposes.

"Instead of manifesting the same solicitude for the physical well-being of a person suffering from disease that it evinced for the spiritual comfort and welfare of members of certain reli-

gious sects," he continued, "Congress restricted in the manner complained of, the medicinal use of intoxicating liquors.

"If, as the complaint alleges, the administration to a patient of more than the statutory quantity of liquor is necessary for his relief from a certain known ailment, the inability of such patient to have his legitimate needs supplied means that he is subjected to a proposition that certainly is not within the terms of the Eighteenh Amendment and which it easily may be imagined, might subject him to serious consequences, if not death itself.

"While the exercise of regulatory power in the interest of the public at large frequently brings about individual hardship, it is to be recalled that one of the chief objects is to preserve and is not to jeopardize and destroy the health of its citizens. For this reason I feel that persons are not to be deprived of the use, when required, of such medicines as are proper and necessary for their relief, unless authority for such deprivation has expressly been conferred."

It was at this point that Judge Knox struck what many attorneys believed was a serious blow at the prescription restriction in the Harrison Act.

"All of us recognize," he said, "that the unregulated use of morphine, cocain and other habit-forming drugs may have most baneful effects; but who would say they should not, in a proper case, be prescribed by a competent physician?"

Returning to the question of whether the prescribing of liquor were "necessary" in certain cases, he interpreted "necessary" to mean "that which is desirable, advisable and needful," and continued:

"It would seem not to be a function of Congress, particularly under the amendment (Eighteenth) to invade, as it were, the domain of medical authority, and to deprive patients of what they need and by every principle of right and justice are entitled to have. Having assumed to do so, it would appear that the action does not constitute legislation appropriate to the object sought to be obtained through the adoption of the amendment.

"To me it seems reasonably clear that the right of the public to have available for its use an adequate supply of a valuable therapeutic agent, transcends the present power of Congress to decree otherwise upon the basis of expediency and policy."

It was within the power of Congress, he said, to pass more stringent laws, if necessary, in order to prevent abuse of the prescription writing authority, but any such regulations "must fall short of an actual prohibition against the use of liquor to the extent demanded by the reasonable necessities of the proper treatment of known ailments."

Congress, as a regulatory measure, might even limit the quantity of liquor to be prescribed if it determined by investigation a quantity that "reasonably and properly" might be required, he conceded, but he declared the present limitation appeared "arbitrary and without justification" on the basis of the facts alleged in the case before him, which had been admitted by the Government.

"I have reached the conclusion," he concluded, "that the limitations of the Volstead Act and its amendments, which make it lawful to prescribe but one pint of intoxicating liquor for the internal use of a person whose known ailment, if it is to be properly treated, requires the administration of a greater quantity, are void."

The logic of this decision is almost incontrovertible, and of course affects all physicians in Judge Knox's jurisdiction, yet Prohibition Commissioner Haynes immediately declared it applied to Dr. Lambert only, and that all other physicians in Judge Knox's territory must bring individual suits to be relieved of the present regulations. Such "bone-head plays" make apparent one reason, at least, why prohibition enforcement is such a ludicrous farce. He also stated that an immediate appeal would be taken to the Supreme Court, but the very next day the following appeared in the newspapers:

"Strong official intimations came from the Treasury Department that there would be a liberalization of the regulations governing the prescribing of medical liquor, and that the decision of Judge John C. Knox, of the Southern District of New York, might result in lifting altogether the ban on physicians' prescriptions.

"This impression, gained from higher officials of the Treasury Department and its prohibition enforcement machinery, is entirely at variance with the statement of Prohibition Commissioner Haynes issued immediately after Judge Knox rendered a decision saying the Eighteenth Amendment covered 'beverage liquors' and not 'medical liquors,' and Congress could not restrict the use of the latter.

"Commissioner Haynes sharply contended that the Knox decision was applicable to one doctor only who brought the action; that there would be an appeal, even as to this one case, and that other physicians throughout the United States must toe the mark.

"Secretary Mellon, David H. Blair, Commissioner of Internal Revenue, and legal advisers of the Treasury head are to hold a conference soon regarding the Knox decision.

"Meanwhile from sources close to Secretary Mellon, official chief of Commissioner Haynes, it was learned that Mr. Mellon is of the following tentative opinions:

"'Regulations of the Commissioner of Internal Revenue must apply to the whole country. There cannot be one regulation for physicians in Judge Knox's

district and another for physicians outside that district.

"'There is a probability that "reasonable regulations" will be promulgated allowing physicians to exercise their own judgment in the prescribing of medicinal liquors.

"'There have been practically no complaints against physicians during prohibition enforcement. Should any physician under liberal regulations and the Knox decision abuse his privileges the Government can check him up.

"'Since Commissioner Blair was made a defendant in the New York action brought by Dr. Lambert, head of a physicians' organization, the Treasury Department and Commissioner Blair will have the deciding say as to whether there shall be an appeal.'"

We in Delaware, who have been particularly restive under the arrogant and unconstitutional Klair Law (this law violates both the state and national constitutions) greet this decision with more than usual interest. Yet in the face of all this, the State Prohibition Director says this decision has no effect in this state! The Klair Law will last just as long as it takes the physicians of Delaware to get *their* case in the Delaware Courts. For the past three years we have been urging the profession of this state to stop going to the Legislature and begging on bended knee for rights unconstitutionally denied us; we have, on the other hand, urged them to put their case in the court, where it belongs. We have been assured by the best constitutional lawyers in the state that we would win our suit. Now, with the inspiring example of our New York brethren before us, there must be no hesitancy; the next annual session of the Medical Society of Delaware must authorize and institute this suit. It will take Judge Knox and several other knocks to pound reason into the craniums of certain fanatics, both executive and legislative, but if this recent decision marks "the high water mark of the Confederacy," if it ushers in a reversion to constitutionalism, if it means a return to reason, God mark the day, and may it so prove.

W. E. B.

CALCIUM IN THE TREATMENT OF TUBERCULOSIS

The administration of lime salts in tuberculosis is one of the medical traditions which the profession has accepted without question.

Calcification of degenerated tubercles is nature's method of repair; the theory that demineralization takes place in tuberculosis has been advanced by unquestioned authority, notably the French. What can be simpler than the deduction that by the administration of lime both the demineralization is overcome and calcification of the tubercular lesions facilitated. Yet, the old adage, "you may lead a horse to water but you cannot make him drink," is particularly applicable in the domain of metabolism. Calcium, or any other drug for that matter, in the digestive tract is still outside the body so long as it is not assimilated and appropriated by the cells. This is almost a truism, and yet a frequently forgotten one by the physician.

In a recent contribution to the subject, Mary E. Mayer and H. G. Wells conclude from a review of the literature that "we have no experimental proof that the administration of calcium, either by mouth or otherwise, increases the amount of calcium deposited in tubercles or other necrotic areas." These authors performed exhaustive experiments on animals, showing that decalcification or demineralization does not take place in tuberculosis, and, furthermore, that feeding of calcium fails to increase the calcium content of the blood. While it appeared that tuberculous tissues do show a tendency to an accumulation of calcium, this tendency is not influenced one way or another by the administration of lime salts; nor could the slightest effect on the course of the infection be demonstrated.

O. Barkus, working in the Saranac Laboratory, failed, in his experiments on animals, to detect any appreciable loss of calcium as a result of progressive tuberculosis. His findings are in accord with those of a number of investigators who have studied the subject.

The time honored argument that clinical evidence is of greater value than the results of experiments on animals, and that the administration of lime salts has proved of value in the hands of such famous clinicians as Robin, Von Noorden, Hamburger, Van Giesen and others of equal authority—this argument may be controverted by the well-known fact that clinical observations, unless rigidly controlled, are of no value. This is particularly the case in tuberculosis, a disease of long duration and most striking variations in the clinical picture. One recalls with a painful sense of disillusion the various and sundry remedies extolled from time to time as curative agents in the treatment of tuberculosis and vouched for by eminent authorities on the basis of clinical observations. The list is long: creosote and its derivatives, aniline, menthol, eucalyptol, sulphuretted hydrogen, hydrofluoric acid, iodoform, carbolic acid, arsenic and its derivatives, various bacterial products and vaccines, from tuberculin to the turtle bacillus vaccine, superalimentation, and other remedies too numerous to mention. Each had its day in court and after a short-lived glory faded into well merited oblivion.

The hypophosphites are dying hard largely because of extensive and intensive commercial boosting, but their day, too, is coming to an end.

In the light of scientific investigations the dazzling glamor of the therapeutic virtues of mineral salts and phosphorus will fade like the others have, and the era of unreasoning empiricism will come to an end. God speed the day!

A. R.

PERSONAL

DR. GEORGE W. K. FORREST, at present police surgeon, is the Republican candidate for Mayor of Wilmington. The election is next month.

DR. JOHN M. STADTER, Democrat, and Dr. Victor G. Washburn, Republican, are candidates for President of the Council.

GOVERNOR DENNY has not yet announced the personnel of the new Public Health and Welfare Commission. The law requires four physicians to be appointed, together with three lay women.

GENERAL NEWS ITEMS

A FURTHER STUDY of the hydatidiform mole has been undertaken at the Chicago Lying-in Hospital and Dispensary, especially in regard to the frequency of malignancy following this condition. An attempt is being made to collect case reports from outside physicians. Cases reported by physicians will be greatly appreciated and the physician will be given due credit in any literature published. Address communications to Robert B. Kennedy, M.D., Chicago Lying-in Hospital, Chicago, Ill.

HOW NEW YORK STATE IS WIPING OUT BOVINE TUBERCULOSIS

The tuberculous cow—a great menace both to the human as well as to the bovine race—is to go, said the New York State Department of Health in an address broadcast from Radio Station WGY of the General Electric Company at Schenectady. For years New York State has been struggling with the problem of preventing tuberculosis in its herds, but only recently have rapid strides been made toward the complete eradication of this disease among dairy cattle.

But why distress ourselves over the fact that cows (or any other animals) have tuberculosis? The answer is that human beings may be infected with tuberculosis by drinking milk from tuberculous cows. The danger to adults from this source is probably slight, but undoubtedly it is very great to small children. Especially is this true for children under five years of age, who are very likely to contract tuberculosis of the bones and glands through drinking milk from tuberculous cows. Therefore, for the protection of the health of our children we must eradicate the disease in the cows from which we get our milk.

Essex County, in northern New York, is the first county in the state to exterminate bovine tuberculosis within its borders. By proclamation it has been declared practically free from this disease and placed under quarantine to prevent reinfection. Undoubtedly Steuben County will soon have equal distinction.

The plan by which these results have been achieved is generally known as the "accredited herd" plan which is carried out under the supervision of the U. S. Department of Agriculture working with the state authorities. The principal features are (1) the systematic testing, by means of tuberculin, of all the dairy cattle within a certain area, usually a county, by a specially qualified and licensed veterinarian; (2) the slaughter of all "reactors," namely cattle found to have the disease; (3) the compensation of owners for losses thus sustained, from state and national funds; (4) the prevention of reinfection by prohibiting the introduction of cattle which have not been tested; and (5) the systematic annual retesting of such herds to insure their permanent freedom from the disease. Such herds when permanently freed from tuberculosis receive a certificate as "accredited herds."

The problem of controlling tuberculosis in cattle is a large and difficult one. Thus far in New York State alone, over 1,000 herds have qualified under this accredited herd plan and the total number of cattle in New York State under supervision is close to 400,000. So rapidly is the demand for this supervision growing that it is impossible to keep pace with it; at the present time some 5,000 herds comprising over 150,000 animals are waiting for the test, for breeders have come to see that an accredited herd certificate is a real business asset. It means a broader market and a higher price for their stock, a better price for the milk, and perhaps, most important of all, it is an insurance of the health of the farmer and his family and the health of their most valuable stock in trade, namely, the dairy herds.

That the state authorities realize the necessity for strenuous action to eradicate bovine tuberculosis is shown by the fact that the Legislature which has just adjourned appropriated $2,500,000 to pay farmers for tuberculous cattle already slaughtered and the same amount to compensate owners whose cattle will be killed as tuberculous during the coming year.

If the farmers of the state will coöperate in this work of ridding their herds of infected animals, they will not only be getting rid of cows that are not even paying their board, but they will be safeguarding the lives of their own children and the children of others.

The Model Milk Code for cities, recently drafted by the State Department of Health and the New York State Conference of Mayors, is especially designed to eliminate danger from tuberculous infection through milk in the cities which adopt these regulations. Under the proposed ordinance the only milk from untested cattle permitted to be sold is Grade B milk and for this very reason the ordinance requires all Grade B milk to be pasteurized. Those who prefer raw milk can still obtain it under this ordinance which permits the sale of Grade A raw milk. All raw milk of that grade, however, must come from tested cows.

The Federal Department of Agriculture has produced an excellent moving picture telling in story form of the risk which the farmer runs in his own household in using milk from tuberculous cows, which is proving very useful in educating both dairymen and milk consumers to the importance of keeping cows healthy. This picture, called "Out of the Shadows," has been used extensively by the farm bureaus and has proved so valuable from the standpoint of human health that the New York State Department of Health has purchased a copy for use in that state.

In a cemetery in the outskirts of Honrilla is a tombstone of granite which bears the following inscription:

Here lies Hermando Sagaz,
Of gratitude unexcelled.
In his will he directed
That his physician be paid first.
Erected to his memory
By the grateful physicians of Honrilla.

—*O. Pine.*

Dr. O. Pine queries: Is not the calling of names a wonderful expedient when real arguments are lacking? If your confrere has the best of the controversy, why not pattern after the latest approved method of styling the opponent and his ideas as Bolshevik? Neither he nor you may know what the term actually signifies; consequently, how can he reply intelligently?

BOOKS RECEIVED

NURSERY GUIDE. For mothers and nurses. By Louis W. Sauer, M.A., M.D., Senior Attending Pediatrician, Evanston Hospital. Illustrated. St. Louis: C. V. Mosby Company, 1923. Price $1.75.

COLLECTED PAPERS FROM THE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE. Volume 1, 1921, with 347 illustrations. St. Louis: C. V. Mosby Company, 1923. Price $12.00.

THE SURGICAL CLINICS OF NORTH AMERICA, April, 1923. Volume 3, No. 2, New York Number. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

CLINICS AND COLLECTED PAPERS OF ST. ELIZABETH'S HOSPITAL, Richmond, Virginia. Volume of 1922. Contributed by the staff. St. Louis: C. V. Mosby Company, 1923. Price $7.50.

MERCK'S MANUAL OF THE MATERIA MEDICA. A ready-reference pocket-book for the physician and surgeon. Compiled and published by Merck & Co., New York, 1923. Price 50c.

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. A Layman's Handbook of Treatment by Lawrason Brown, M.D., Fourth edition, thoroughly revised. Lea & Febiger: Philadelphia and New York, 1923. Price $1.50.

PRACTICAL LOCAL ANESTHESIA AND ITS SURGICAL TECHNIC. By Robert Emmett Farr, M.D., F.A.C.S., Minneapolis, Minn. Illustrated with 219 engravings and 16 plates. Lea & Febinger: Philadelphia and New York, 1923. Price $8.00.

DISEASES OF THE NERVOUS SYSTEM. A Textbook of Neurology and Psychiatry. By Smith Ely Jelliffe, M.D., Ph.D., and William A. White, M.D. Fourth edition, revised, rewritten and enlarged. Illustrated with 475 engravings and 13 plates. Lea & Febinger: Philadelphia and New York, 1923. Price $9.50.

THE PRINCIPLES AND PRACTICE OF PERIMETRY. By Luther C. Peter, A.M., M.D., F.A.C.S., Professor of Ophthalmology in Temple University Medical School and in The Graduate School of the University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 161 engravings and 5 colored plates. Philadelphia and New York: Lea & Febiger, 1923. Price $4.00.

NONSURGICAL DRAINAGE OF THE GALL TRACT. A treatise concerned with The Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems in Their Relation to Gastro-enterology and General Clinical Medicine. By B. B. Vincent Lyon, A.B., M.D., Chief of Clinic, Gastro-Intestinal Department of the Jefferson Hospital, Philadelphia. Illustrated with 175 engravings and 10 colored plates. Lea & Febinger: Philadelphia and New York, 1923. Price $10.00.

STUDIES IN THE STANDARDIZATION OF THE WASSERMANN REACTION With the Description of a NEW METHOD. By John A. Kolmer, Professor of Pathology and Bacteriology in the Graduate School of Medicine of the University of Pennsylvania and Head of the Department of Pathology in the Research Institute of Cutaneous Medicine of Philadelphia. From the Research Institute of Cutaneous Medicine, Dr. Jay F. Schamberg, Director.

LEGAL MEDICINE AND TOXICOLOGY. By many specialists. Edited by Frederick Peterson, M.D., Manager Craig Colony for Epileptics; Walter S. Haines, M.D., late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College; and Ralph W. Webster, M.D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second Edition. Two octavo volumes, totalling 2268 pages, with 334 illustrations, including 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $20.00 net.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA. January, 1923. Vol. 6, No. 4. Philadelphia Number. Philadelphia and London: W. B. Saunders Co.

This is an especially interesting number of the Clinics, and may be considered as representative of the work done in the large teaching institutions of a metropolitan medical center. Articles on the following topics are presented: (I) Hypertension and Nephritis and (II) The Early Treatment of Empyema by Aspiration, by Dr. Thomas McCrae; Arterial Blood Pressure in Heart Disease, by Dr. C. C. Wolferth; Coronary Thrombosis, by Dr. David Riesman; Aneurysm of the Aorta—Effects on the Coronary Circulation, by Dr. Robert G. Torrey; Tuberculous Pleurisy — Cardiac Aneurysm, by Dr. George William Norris; Tuberculous Epididymitis Terminating in Tuberculous Meningitis, With Xanthochromia of the Spinal Fluid, by Dr. Baxter L. Crawford; (I) Addison's Disease and (II) Hemolytic Jaundice, by Dr. James M. Anders; Pigment Metabolism and the Van der Bergen Test to Differentiate Obstructive and Non-obstructive Jaundice, by Dr. Harold W. Jones; Basal Metabolism Studies in the Differential Diagnosis of Conditions Resembling Hyperthyroidism, by Dr. Henry K. Mohler; Influence of Infection on Carbohydrate-tolerance in Diabetes Mellitus, by Dr. Richard A. Kern; Renal Glycosuria, by Dr. Leon Jonas; (I) Syphilis with Pulmonary Manifestations and (II) Diabetes and Tuberculosis, by Dr. Elmer H. Funk; (I) Diabetes Mellitus with Slight Acidosis and (II) Septic Meningitis Secondary to Otitis Media, by Dr. O. H. Perry Pepper; (I) Syphilis of the Kidney and (II) Carcinoma of the Stomach in Association with a Positive Wassermann Reaction and a History of Chancre, by Dr. Truman G. Schnabel; Peritonitis Carcinomatosa Complicating Schirrhous Cancer of the Stomach, by Dr. T. Grier Miller; Tumors of the Mediastinum, by Dr. Joseph Sailer; Lung Suppuration Caused by Prolonged Sojourn of Foreign Body, by Dr. Chevalier Jackson; Bronchoscopic Drainage of Pulmonary Abscesses and Bronchiectasis, by Dr. R. M. Lukens, Dr. W. F. Moore, and Dr. E. H. Funk; Profuse Hemoptysis, by Dr. Edward Weiss; Unusual Types of Leukemia, by Dr. John H. Musser, Jr.; Staphylococcus Aureus Septicemia, by Dr. Albert E. Bothe. A. A. E.

THE EVOLUTION OF MODERN MEDICINE. A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913, by Sir William Osler, Bart., M.D., F.R.S. Yale University Press, New Haven, 1921.

An address, a dissertation, a medical paper, or a volume upon any subject over the name of William Osler will be equally sought and read by thousands of devoted friends. Probably no one during the past fifty years has formed so many warm personal friends. No one certainly has done so much for medical education or inspired so many enthusiastic students. This book furnishes entertainment, inspiration, and encouragement.

Dr. Osler had but three hobbies—medicine, education and bibliography. Endowed with most unusual industry, a phenomenal memory, a keen appreciation of relative values, a fascinating facility of expression, and a long life for the zealous development and application of his talents, no one has ever been so well fitted to write the history of medicine. While deeply grateful for this "aëroplane flight" which the author has left us as a priceless legacy, we can but regret that he did not have the inspiration and the opportunity to give us a more voluminous work. As it is, the present volume gives a comprehensive insight into the development of the art and science of medicine, with a remarkable evaluation of the work of all contributing nations.

The lurking humor and the warm personal touch, so characteristic of all Osler's writings, pervade every

page as the story unrolls like an unbroken parchment from Babylon to Oxford.

The editors have acquitted themselves well. We can only suggest a fuller index in order to make this treasured volume more valuable for ready reference. L. L.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. Fifth Edition. By Anthony Bassler, M.D., F.A.C.P. Published by F. A. Davis Company, 1922. Price $8.00.

The fifth edition of this very serviceable textbook brings the subject well up-to-date. The author approaches his subject from the clinical rather than the ultra scientific viewpoint.

In places here and there throughout the book there is much obscurity as to the meaning, such as on page 104: "When considered in connection with other symptoms, the phenomenon may have some value, but this is very limited, and too many impossible to accurately distinguish other causes may give these sensitive areas and thus lead to the error of supposing that internal disease exists; such as where the spots are due to hysteria, uremia, neuralgia and central neurological affections, etc." And page 110: "My experience in diagnosing ptosed and dilated states of the stomach, the comparison between where the tympanic note of the upper border in the two positions is situated is of more value than in examining for the position of the greater curvature—in the upright position the proximity of the transverse colon to the lower border of the stomach is often most confusing."

Such jumbling of the text "is often most confusing" to the reader who tries to interpret the thought of the writer. In his next revision the author should make the reading smoother in many places, for the thought he wants to put over is worthy of a better conveyance than he uses, as illustrated above.

The book is recommended to the general practitioner for much valuable information gleaned from the author's many years of clinical experience. A. C. M.

RECIPES FOR INSTITUTIONS, edited by the Chicago Dietetic Association and published by Macmillan Company, New York, is a compilation of recipes prepared by seventy dietitians of the American Dietitians' Association, who are engaged in institution, cafeteria and tea room work.

The greater part of the work deals with recipes for soups, meats, vegetables, salads, dressings, sandwiches, cakes, pies, desserts, etc., etc., while the remaining portion, a very small part of the text, deals with special diets that may be used in such diseases as nephritis, diabetes, constipation, anemia and typhoid fever.

The book is not a dietary guide for institutions in any sense of the word, but is wholly a compilation of, as stated in the text, "Recipes for Institutions." These recipes are of a large variety with quantities and servings indicated. The book will serve well its purpose in any culinary department. J. A. J.

MANAGEMENT OF THE SICK INFANT, by Langley Porter, B.S., M.D., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., San Francisco. 654 pages, with 54 illustrations. St. Louis: C. V. Mosby Company, 1922. Price $7.50.

One of the strongest features of this book on pediatrics by Porter & Carter is the expression of personal experiences in diagnosis and treatment.

It is unique and so different from most other books on this subject that it commands attention.

The first chapter should be memorized by the young practitioner for it contains many valuable points. These are fundamental in pediatrics and are not routinely considered by physicians who do not specialize in this subject.

The presentation of the main symptoms in diseases of infants under special chapters makes the book valuable for ready reference.

The treatment of special diseases in part II is indefinite, thus leaving much to be desired.

Methods described in part III certainly are very academic and omit no detail. Perhaps experience in the use of these various methods makes the details seem too elementary but nevertheless, when followed step by step, one certainly can make no mistake.

As every pediatrician must be a dietitian, even to the detail of preparing foods and formulas for the first time, chapter XXII is a careful explanation of this important part in the treatment of sick children and is a valuable part of the book.

The chapters on drugs may cause much comment and even criticism.

One must remember these prescriptions have been used successfully *by the authors* in the treatment of the various conditions mentioned but are not "cure-alls."

For instance, the prescription suggested for cough of pertussis is rather formidable and suggests "polypharmacy," but may have proved very valuable to the authors.

As a whole the book is instructive, well written and a valuable addition to pediatric literature.

H. T. PRICE.

RADIUM THERAPY. By Frank Edward Simpson, A.B., M.D., Professor of Dermatology, Chicago Policlinic; Adjunct Clinical Professor of Dermatology, Northwestern University Medical School; Attending Dermatologist to Mercy Hospital, Alexian Brothers Hospital, Henrotin Hospital, etc. Cloth, 391 pages, with 166 original illustrations. St. Louis: C. V. Mosby Company, 1922. Price $7.00.

The author is a well-known dermatologist, and possesses an international reputation for an experience and success in the use of radium as a therapeutic agent which is exemplified in the book he has produced for the benefit of others. All the necessary details of the methods of applying radium based upon his wide experience are imparted to the reader in a very concise and convincing manner. This is a very important textbook and reference work for all those who practice radiotherapy, whether in connection with dermatology or in the treatment of other conditions in which it may be employed.

The opening chapters deal with the history of radioactive discoveries, the origin and methods of extraction of radium, the physics of radioactive changes, the preparation and measurement of the emanation, filtration and absorption of radioactive products. This section of the book which deals with physics is accurate, concise and easily understood. A very important chapter is devoted to the biologic effects of the products of radium decay. Ample attention is given to the general methods of application, special technic and the estimation of required dosage.

The last half of the book is devoted to the special methods of application and the indications and results of radium radiation in various disease conditions. The details are sufficient for reference in connection with conditions which are frequently treated with reasonable success, and mention is also made of many other conditions in which radium has been employed with only occasional results or no success.

HENRY K. PANCOAST.

OPTICAL METHODS IN CONTROL AND RESEARCH LABORATORIES, by J. N. Goldsmith, Ph.D., M.Sc., F.I.C.; S. Judd Lewis, D.Sc., B.Sc., F.I.C., Ph.C.; F. Twyman, F. Inst. P. Vol. I. (Second Enlarged Edition, November, 1922.) Spectrum Analysis, Absorption Spectra, Refractometry, Polarimetry. Published by Adam Hilger Ltd., London, England. Royal 8vo., pp. 56+iv. Limp Cloth, 1s. 6d; post free, 1s. 8d. With three photogravure plates.

The optical methods dealt with in this book are those employing spectroscopes (or spectrographs), spectrophotometers, refractometers, and polarimeters. No detailed descriptions of these instruments or their technique are included, but in each case references are given to sources of information on these points,

The book is published by a well and favorably known firm of manufacturers of spectrometers, refractometers and polarimeters. There is presented a good sketch of the present fields of practical application of the stated optical instruments. It is suggestive rather than descriptive and "is intended as an introduction to the uses of the above instruments, as a guide to their selection, and as an index to further sources of information concerning their employment in control and research laboratories." G. H. MEEKER.

HANDBOOK OF ORGANIZATION AND METHOD IN HOSPITAL SOCIAL SERVICE, by Margaret S. Brogden.

Miss Brogden's working manual for Hospital Social Service is a most compact, clear and useful guide, so orderly and complete in detail that it should fill admirably the need to-day for standards and system in a comparatively new kind of work. One reads with special pleasure the short, clear paragraphs with no "frills," and the heart of the matter unmistakable.

The reasonableness of the instruction for getting the human problem's solution, avoiding "comings and goings without an accomplished goal," is made plain. The noteworthy placing of the record in its right relation to the whole service, as not an exalted end in itself, yet, painstakingly kept, indispensable to "blue-ribbon" achievements, a "tool to be made keen and kept available," is an idea suited to wide application in all kinds of health and welfare work to-day.

The fact that the volume has grown out of ten years of active service and study, and has only the essence of what has proved useful, and further, that it has found its place among the students of the New York School of Social Work can only mean a wide acceptability in the world of Social Service. M. R. NOBLE.

THE MEDICAL CLINICS OF NORTH AMERICA. March, 1923. Vol. 6, No. 5. Ann Arbor Number. Philadelphia and London: W. B. Saunders Co.

This number of the Clinics contains articles of varied interest on subjects as follows: Hodgkin's Disease of the Mediastinal Glands and Lymphosarcoma, by Dr. L. M. Warfield; High Fat Diet in the Treatment of Diabetes Mellitus, by Dr. L. H. Newburgh; Contraindications to the Intensive Treatment of Syphilis, by Dr. U. J. Wile; "Painful" Women, by Dr. H. Cabot; Roentgen Ray Treatment of Skin Diseases, by Dr. C. K. Hasley; The Psychopathic Personality, by Dr. A. M. Barrett; Chorea and Choreiform Affections, by Dr. C. D. Camp; Splenomegaly, with Acholuric Jaundice, by Dr. L. D. Stearn; Pericarditis, by Drs. F. R. Wilson and C. R. Hills; Chronic Pancreatitis, by Dr. P. L. Marsh; Endocarditis, Purpura Hemorrhagica, by Dr. G. R. Herrmann; Pyloric Obstruction, by Dr. J. B. Youmans; Peptic Ulcer, by Dr. I. W. Greene; and a series of clinics from the Department of Pediatrics and Infectious Diseases, (Tuberculosis of Glands and Bones, Diphtheric Paralysis, Granuloma Rubra Nasi, Tuberculosis Cutis, Vomiting of Infants, Hodgkin's Disease, by Dr. D. M. Cowie; Acute Lymphatic Leukemia, Typhoid Spine, by Dr. W. S. O'Donnell; Syphilis of the Central Nervous System in Children, Splenic Anemia of Hypoplastic Type, by Dr. R. M. Greenthal; Madelung's Deformities, by Dr. G. M. Brown; Enlarged Thymus, by Dr. J. P. Parsons; Familial Corpus Striatum Syndromes, by Dr. L. A. Hoag. A. A. E.

ANIMAL PARASITES AND HUMAN DISEASE, by Asa B. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institution, Houston, Texas. Second edition, revised. Published by John Wiley & Son, Inc., 432 Fourth Ave., New York. 572 pages; 254 clearly reproduced figures. Price $4.50 postpaid.

This is a very important subject and has been written by one who has had a great deal of experience in this connection. It has been written chiefly for the general public because the author feels there is considerable lack of knowledge concerning this phase of medical work.

Special emphasis has been laid on the biological and practical aspects of the subject and attention has been paid to the effects of the parasites on the human host. Besides being of help to the general public it is a book that will assist physicians, public health officers and nurses, particularly those who are interested in public health work because it gives clearly the essential facts concerning parasitic diseases and explains it in such a way that the underlying principles can be fully understood and followed out.

The second edition is a revision of the former one, bringing it up to date in this field of endeavor. Some of the changes are in connection with the recent work on yellow fever, a treatise on the Rickettsia or like organisms, revision on the chapter relative to amebæ and intestinal flagellates and ciliates. There is also a very interesting account of trench fever, and many other interesting features have been added to the work.

The reviewer does not hesitate to recommend it, therefore, to all who are interested in this subjct.

F. F. D. R.

PRINCIPLES AND PRACTICE OF INFANT FEEDING, by Julius H. Hess, M.D., Professor and Head, Department of Pediatrics, University of Illinois, College of Medicine; Chief, Pediatric Staff, Cook County Hospital, Chicago, Ill. Illustrated. Third revised and enlarged edition. Published by F. A. Davis Co., Philadelphia. Price $4.00 net.

The fact that this work has been revised upon three different occasions shows it has met with favor by the medical profession.

The author has had a large experience in this particular line of work, and has divided up the contents of the volume into general conditions, including anatomy and physiology of the digestive tract, sketching the metabolism in infants and the bacteria of the digestive tract. He then takes up in order the nursing of the infant, artificial feeding, nutritional disturbances in artificial feeding of infants. The latter is gone into in detail and is very interesting and helpful.

There are thirty-four illustrations and nineteen tables given. The chapters on vomiting, colic, flatulence, constipation and abdominal stools have been completely rewritten. Other phases of the work have been revised to conform with the latest researches. Also new chapters relative to rickets, scurvy, spasmophilia, acidosis, anemias in infancy have been added. F. F. D. R.

Dr. O. Pine queries: In the city of Medical Bluffs, ten thousand "Swat-the-Fly" posters were circulated by one hundred mighty and valiant shielded and uniformed petty political heelers created sanitary inspectors by the magic wand of the political tyrants of the city; one hundred medical orators and two imported celebrities, on innumerable occasions, in eloquent and non-eloquent dissertations, advised fifty highbrow and medium-brow civic bodies and women's clubs how to demolish the fly enemy with scientific efficiency; the mayor proclaimed a "Swat-the-Fly" week; prizes were offered to the children turning into the "Civic Swat-the-Fly Campaign Headquarters" the ten greatest numbers of the dead enemy; a medley committee of politicians, educators, clergymen, physicians, moving picture artists, and chronic public posers awarded graded prizes to the ten best essays on "Swat-the-Fly" by high school pupils, and

During the carnage, 100 uncovered garbage wagons, five hundred uncrowned garbage cans, two hundred open manure boxes and one hundred blind sanitary inspectors, one seat-bound health bureaucratic dignitary, one highly decorative mayor, and the score of tyrants who imposed them upon the servile populace, pursued their usual and well-precedented course. How many flies were left after this Napoleonic-like campaign of colossal carnage? Reader, do you live in Medical Bluffs? And are you one of the "Great Bluffed?"

AN APPRECIATIVE MEMBER

The Secretary of the Northampton County Medical Society has sent in the following self-explanatory letter, as well worth the perusal of other members of the Society:

My Dear Secretary:

I herewith inclose my check for ten ($10) dollars, payable to the Society, for which please forward me the official receipt.

It may please you and the members to know, or see a statement, of what I credited myself with for value received for the 1922 year's dues of ten dollars. It is as follows:

1. The pleasure of attending eleven (11) regular meetings—monthly.
2. Eating and enjoying eleven (11) dinners at the expense of the Society.
3. Reading twelve issues of the State Medical Journal.
4. Protection from alleged malpractice suits for one year.
5. The protection afforded for one year in the Medical Relief Fund.
6. The benefit of membership in the American Medical Association—to fellowship therein.
7. The participation and benefits of organized medicine.
8. The enjoyment of listening to the "devil" getting his dues.

What more could one want for the ten ($10) dollars? I am, as ever and ever,

Very truly yours,

A Member.

CONGENITAL SARCOMA OF KIDNEY IN A CHILD OF TWENTY-NINE DAYS

Clyde Leroy Deming, New Haven, Conn. (*Journal A. M. A.*, March 31, 1923), reports a case to emphasize (1) the value of complete cystoscopic examination in children; (2) that urograms are just as essential in the examination of infants as in that of adults, and (3) that local anesthesia may be used for nephrectomy in infants.

THE SAN FRANCISCO SESSION

ALPHA KAPPA KAPPA BANQUET

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28th. All members attending the annual session are strongly urged to communicate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

BRING YOUR BLUE FELLOWSHIP CARD

Registration will be made much easier for Fellows and for the Registration Bureau at San Francisco if each Fellow will bring his Fellowship card for 1923, and present it when registering. Complete instructions about registration will appear in the San Francisco Number of *The Journal*, to be issued during the month of May. All Fellows who have been reported to the American Medical Association for enrollment as members of constituent state medical associations and who have paid their Fellowship dues have had 1923 blue Fellowship pocket cards sent them.

MEETING OF THE MEDICAL VETERANS OF THE WORLD WAR

There will be a meeting of the Medical Veterans of the World War at 2:30 p. m., Tuesday, June 26th, at the Civic Auditorium in San Francisco. Lieut.-Col. Bertram F. Alden, San Francisco, is the chairman of the local committee of arrangements of this organization, and Dr. Arthur T. McCormack of Louisville, Ky., is president of the Medical Veterans.

INVITATION TO MEMBERS OF SECTION ON OPHTHALMOLOGY AND SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Members of the Section on Ophthalmology and of the Section on Laryngology, Otology and Rhinology are extended a most cordial invitation to stop off at Omaha, on their way to San Francisco to attend the annual session of the American Medical Association, to play golf. Dr. Clarence Rubendall, Brandeis Theater Building, Omaha, will advise those interested concerning arrangements that have been made for their convenience.

GOLF AND COUNTRY CLUB ENTERTAINMENT

An attractive program, including two tournaments, has been arranged for golf enthusiasts. Through the activities of Dr. James Eaves, chairman of the Committee on Golf and Country Clubs, the coöperation of all golf and country clubs throughout California has been obtained. Fellows visiting San Francisco during the session will receive any desired information relative to golf by communicating with the chairman or any member of the golf committee at headquarters or at the Civic Auditorium.

Tournaments are arranged for Fellows of the American Medical Golfing Association, and also a tournament for Fellows not members of this organization at the San Francisco Golf and Country Club and at the Lakeside Golf and Country Club, respectively, Monday, June 25th. Other tournaments will also take place during the week of the session, in and around San Francisco and various parts of the state. All Fellows, and particularly those members of the American Medical Golf Association who desire to take part in the tournament, are requested to communicate with the chairman, Dr. Eaves, 808 Balboa Building, San Francisco, as soon as possible.—*Jour. A. M. A.*, April 28, 1923.

THE COMMON SOURCES OF ERROR IN LUNG EXAMINATIONS

E. A. Duncan, El Paso, Texas (*Journal A. M. A.*, April 28, 1923), asserts that the considerable number of erroneous diagnoses of pulmonary tuberculosis are almost always based on or supported by descriptions of nonexistent or misinterpreted physical signs. Any single sign of increased pulmonary density, especially at the apexes, unaccompanied by other evidence, must be regarded as insufficient and conclusions therefrom withheld. This applies equally to alterations in fremitus, percussion changes and abnormal breath sounds. The misleading differences in the physical signs of the two sides must be kept in mind. Vigilance on the part of the examiner to recognize fictitious accentuations of breath sounds, extrapulmonary noises of cartilaginous origin and marginal sounds is essential to correct diagnosis. The elicitation of provoked râles requires a considerable reduction of pulmonary volume by expiration followed by cough. Basal bronchitis without upper lobe involvement must be proved tuberculous by the laboratory before such diagnosis can be made.

Dr. O. Pine queries: Why does the average public health medico become so soon "a thing apart" from the profession after he has spread his official wings? Does the political breeze cool his former fraternal instincts?

THE NATIONAL BOARD OF MEDICAL EXAMINERS

With the state board statistics published this week appears also statistics showing the results of examinations held by the National Board of Medical Examiners. During the first six years of its existence, the National Board held eleven examinations. Each was held in a large city, and those wishing to take the examination, unless they happened to live in that particular city, were required to travel long distances in order to take the examination. As a consequence, only 325 candidates were examined and 268 certificates issued—an average of forty-five each year. At the beginning of the board's activities, in an editorial comment, *The Journal* urged the adoption of an arrangement whereby the examinations could be held simultaneously in different cities, so that candidates would not need to spend so much time and money to take them. During 1921, therefore, the plan was adopted whereby the examination was divided into three parts, or three examinations, one at the end of the second year, one at the end of the fourth year, and one after the graduate has completed his internship. An arrangement was made also whereby the first two examinations could be taken in any Class A medical school, and the third examination, which is entirely clinical and practical in its nature, could be taken in any one of fifteen large cities distributed in various parts of the country. The new plan has been a great success, as shown by the fact that in the first year 412 candidates were examined, eighty-seven more than were examined in all six previous years. It is interesting to note that the examinations held by the National Board are now widely recognized by state licensing boards. As noted in the statistics, holders of the certificate are now eligible for registration without further examination in twenty-three states, and it is only a matter of time when the certificate will be recognized by all state boards. It is already being regarded as an evidence of excellent qualifications both in this country and abroad. The certificate, therefore, even now, has a value far greater than the money and time required by the student to take the examination.—*Jour. A. M. A.*, April 28, 1923.

WHAT'S A HEALTH EXAMINATION, ANYWAY?

Most people have had the experience of going to a doctor for an examination at some time in their lives, some have had to go many times. Usually they have gone because there was something wrong with them, pain, fever, a cough, a rash or what not, but anyway, something for the doctor to study, give a name to and prescribe for. But imagine the factory manager who waits for the machinery in his plant to break down before he gives thought to having it overhauled—how long would he keep his job? Is his machinery more important or more liable to accidents than that of your body? Don't you think it would pay to have it overhauled before the breakdown comes and to see if the machinery is really being run efficiently?

In the June issue of *Hygeia,* Dr. Haven Emerson, professor of public health in Columbia University, gives reasons enough to convince the most skeptical that health examinations pay, not only in increased health, but also in dollars and cents. "It has grown to be a custom" for people who employ men and women in large numbers in shops and factories "to have each new employee examined to see if he or she is in sound health." And again, "Many of the unions are requiring an annual health examination of their members because they have found this the best way to prevent the illnesses which cost their sick benefit funds so much." If these people who are in big business find it worth while and economical, there is probably something to it.

VACATION TYPHOID FEVER

Many attacks of typhoid fever are contracted by drinking the water supplied at camps and vacation resorts, bathing in polluted river water, or drinking contaminated milk. Vacation typhoid fever is a real danger. When there is the least doubt, boil the water and the milk; always insist on thorough screening of food from flies.—*From Hygeia.*

ANALYSIS OF METHODS OF MODERN MEDICAL EDUCATION

The reorganization of medical education is considered by William Cogswell Clarke, New York (*Journal A. M. A.*, April 28, 1923), under five main subjects: (1) teachers; (2) students; (3) the subject matter included in a medical course; (4) methods of teaching and of study, and (5) the chief aims in medical education and the present hindrances to their attainment. Clarke's closing words show that it is his belief that the prime essential is the teacher. He says, "Only the best instructors should be chosen, because on them depends the selection of students and to a large degree their development and education. The surest way to have many good instructors available is continuously to develop them from those possessing the greatest apparent potentialities. Teachers who do not continuously prove of value should not be allowed to remain in a school. The method maintained should aim for the selection and maintenance of good teachers and laboratory workers, for under them any method of education is successful.

DISPOSITION OF URETERS IN CERTAIN ABNORMAL CONDITIONS OF URINARY BLADDER

William E. Lower, Cleveland (*Journal A. M. A.*, April 28, 1923), summarizes his paper as follows: "Transplantation of the ureters is an operation urgently indicated in the presence of certain malformations of the bladder, either congenital or acquired. The choice of site should be one to which the transplantation can be made with the minimum of immediate operative mortality and a maximum of ultimate comfort to the patient. From my own series, I believe that the submucous implantation of the ureters in the sigmoid or rectum by the technic first proposed by Coffey most nearly fulfills the foregoing requirements. In any case, agreement regarding the most efficient method of treating the class of patients on whom this operation is required is needed in order that the technic may be standardized. The basis of judgment for the final selection of such a standardized technic should be its ability to give to the patient the utmost possible diminution of his misery and the best possible economic status."

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ORIGINAL ARTICLES

THE RENAISSANCE OF THE GENERAL PRACTITIONER*

SYDNEY R. MILLER, M.D.
BALTIMORE, MD.

1. INTRODUCTION:

The renaissance of the good general practitioner is a matter of vital importance both for the medical profession and the public at large. Though much discussed, the problem is far from a satisfactory solution, and, as one result, the profession is obliged to shoulder the blame for no small amount of public dissatisfaction and distrust, by no means devoid of substantial grounds. It would be impossible, in one paper, to discuss the various causes of and suggest ways for the improvement of those conditions which have brought about apparent deterioration in the general practice of medicine. Opinions differ: to the author's own way of thinking many of the defects and their remedy lie within the hands of the general practitioner himself. It is to him, therefore, that this message is directed —to sound some needed warnings, to banish certain misconceptions, but most of all to encourage and stimulate him and to rearouse a legitimate and enthusiastic opinion of his importance in the practice and advancement of the profession of medicine. For unless all physicians and the communities served by them have a clear vision of the present problems and future promises of medicine, and the ways by which they can be attained, the public will be more strongly and wrongly influenced by the shortcomings of present-day practice than by the wonderful achievements medicine has already won. Public enlightenment is essential to medical progress, and the good practitioner indispensable to each.

2. CERTAIN CONTEMPORARY TRENDS:

Contemporary medicine, particularly in the past ten or fifteen years, has been characterized by certain dominant trends, to some of which brief reference must be made.

(a) There has been an ever increasing degree of specialization and a coincident rise in the number and variety of specialists. Unfortunately many of these are incompetent either in terms of adequate specialistic training or a well rounded experience in clinical medicine. The domain of their activities is confined chiefly to the larger cities. The ranks of specialism are filled not merely by recent graduates but by ambitious or dissatisfied older practitioners. This explains in part the development of a most deplorable deficiency in adequate medical practice observed in many smaller rural and urban communities.

(b) Contemporary medicine has witnessed the elaboration of an enormous number of laboratory tests and the introduction and prompt commercial exploitations of many instruments of so-called diagnostic precision.

(c) Certain noteworthy and perhaps unavoidable changes have occurred in medical education. The much discussed and honestly questioned "full-time" régime has attracted much attention. Medical students of the present generation are trained, it is contended, in an ultra-scientific and specialistic atmosphere and are subjected to the risk of neglecting some of the subjects of more fundamental value in the practice of medicine. The glamor of the certain (?) laboratory diagnosis, the disastrous dabbling in pseudo-scientific research while medically adolescent, and a woeful tendency to regard patients as objects of scientific curiosity, to the neglect of the broader human problem each one presents, spell disaster to the rising generation of physicians. They go out unequipped to meet inevitable public wants —trained too often by men whose scientific ardor has not been tempered both by adversity and a broad experience with suffering humanity.

(d) As a direct result of specialism, contemporary medicine has seen the development of the so-called group of community practice.

Each one of these and many other unmentioned trends reflect studious and laudable endeavors to reduce medicine to the realms of a pure science—which it never can be—to make diagnosis simpler and more certain, and hence the treatment of disease or the restoration of

*Read by invitation before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

diseased function more precise. No one could intelligently argue against the desirability of such ideals nor sanely contest the value of advances already made.

3. Reactionary Influences Upon the General Practitioner:

An unbiased analysis of this brilliant era in our profession clearly reveals certain evil results of these modern medical tendencies. Some have seemed to exert a detrimental influence particularly upon the general practitioner and his work, and therefore, upon the community served by him. One might mention a few.

(a) The pursuit of knowledge has tended to assume ever more and more an academic nature with far too little reference to the problems confronting the doctor who *practices* medicine. It has been unfortunate for clinical medicine that the laboratory worker has been allowed to dominate the field of research. The doctrine has apparently grown which postulates medical advancement more upon cloistered study than broad clinical observation. Money is lavishly poured out for research, and fortunes expended upon laboratories, their maintenance and the salaries of able men appointed to run them. Rising generations of students, tutored under such influences, absorb the belief that through such research alone can medicine advance. The able general practitioner has little if any say in the shaping of medical education or research. Without grants to help him use *his* opportunities, he is forced into an insignificant niche—unhappily aware of the modern demise of the investigator engaged in medical practice.

(b) The ranks of specialism have been overcrowded by those who too often have succumbed to a serious contemporary materialistic lure. Practitioners, as a rule working much harder, have been forced to grapple with a dissatisfaction bred by an unfair disparity between their incomes, comforts and opportunities for recreation, as contrasted with consultants, specialists and surgeons.

(c) Contemporary medicine has not yet been tempered with a proper degree of humility, and professional credulity—a benign form of dishonesty—has become a disease of very serious public menace. Specialists expound views, describe methods and claim cures based far too much on impressions rather than facts. Fads—short cuts to diagnosis and extravagant methods of therapy—are widely exploited. One result has been a modern tendency for patients to seek specialists primarily, or undergo, without their physician's advice or knowledge, a group-diagnostic study. Many such, studied either too impersonally or with too narrow a perspective, dangers inherent in group practice or specialism, furnish ready recruits to the ever present opponents of medicine—the cults. These, either from a semi-religious fanaticism or from motives of pure financial gain, rob both the physician and the community of its health. Practitioners, silent witnesses of such events, have too often succumbed to feelings akin to disdain, even for merited specialistic study, and have rebelled against the utilization of methods apparently, though not actually, ruinous to their private practice.

(d) Finally, the average general practitioner has become unavoidably confused by the contemporary deluge of diagnostic laboratory procedures. Too often he has been misled into an excessive reliance upon them, to the neglect of other studies far more important. But what is far worse—many a practitioner has come to feel that he is behind the times, unless surrounded by elaborate and expensive apparatus, with the use of which he is unfamiliar. He must therefore employ a technician, upon whose results he is forced to rely dogmatically, or else entrust his problems to some centralized laboratory. Since such a state of affairs has been impossible for many practitioners, not a few have developed disastrous feelings of personal inadequacy and an almost psychasthenic tendency to undervalue their usefulness to their community and profession. Underpaid, overworked, discouraged, out of the scientific glamour of the times, hopeless victims of modern scientific progressiveness, bereft thereby of a chance to contribute to medical advancement and thus doomed to the ruinous monotony of piece-maker, they have become the ready victims of the envy or dissatisfaction which robs them of their normal vocational enthusiasm. Such sentiments should not and must not be allowed to exist, even in the minds of a minority. Moreover, such feelings are certainly *not* shared by the intelligent public at large, which is coming more and more to realize that the good general practitioner always will be the backbone of the medical profession. He need but make his standards of practice higher as medicine advances and an honestly informed public becomes more discriminating.

4. Analysis of the Laboratory Problem and Specialism:

Granting, for argument, that excessive or improper reliance upon laboratory procedures or specialistic study have been potent factors in causing *some* of the practitioner's contemporary difficulties, a brief analysis of them seems warranted.

There are four main varieties of laboratory methods or tests.

(a) Those of pure research.

(b) Those of suspected but unproved value. These have a legitimate field; their number will always be large and their diligent study is to be encouraged. From the sum total, a few will stand as the result of accredited merit. Their clinical application should be studiously restricted to hospitals and teaching institutions until their relative value, inherent sources of error, or utter uselessness have been decisively demonstrated.

With these two groups the active practitioner *need* not concern himself whatsoever.

(c) Those of established value but of a complexity which puts their application beyond the reach of the average practitioner, either by reason of equipment required, the technic or time involved, or the infrequency of their need. Included in this group one might mention basal metabolism, the Wassermann reaction, clinical bacteriology, blood chemistry, and electrocardiographic studies. Fortunately, the utilization of tests in this group is *necessary* in but a relatively limited number of cases. To deal intelligently with them but three things are necessary.

(1) An understanding of the *physiological basis* for the tests, which in turn implies a knowledge of when they are clinically indicated.

(2) An unwillingness to interpret the results except in correlation with all the clinical data critically judged by sound common sense. The practitioner unable thus to appraise laboratory findings deprives his patients of expected benefits.

(3) First hand information as to the methods used and care exercised in the laboratory in which the tests are made.

(d) Finally, those tests of long tried and proved worth, simple, requiring a minimum amount of laboratory apparatus and a small expenditure of time, each capable of yielding diagnostic information which every practitioner should be able to interpret correctly. In this group are included the routine studies of the blood, urine, feces, gastric contents, spinal fluid and sputum. Twelve years in the teaching and use of clinical laboratory methods corroborates Peabody's recent statement that "in spite of the great contributions which the laboratory has made to clinical medicine, there has been surprisingly little change in the character or number of the technical methods that are essential to good practice. In spite of the extraordinary influence that the laboratory has had on the development of medical science, there is as yet no cause for the physician to feel that he cannot keep up with the requirements of the best modern methods." The practitioner who cannot or does not judiciously utilize these laboratory procedures is deficient in his clinical practice and doomed to fall by the wayside.

Essentially the same principles should govern the general practitioner's utilization of the various specialties. It goes without saying that no one can be equally proficient in all of the domains now ruled over by specialists. There is but little excuse, however, for failure or inability to recognize the commoner significant changes in the eye grounds, to transilluminate an antrum, detect rectal or pelvic abnormalities, note the simpler evidences of neurological disease or suspicious periapical dental infection. It is not necessary routinely to refer a patient to a number of specialists simply because pathology is *suspected*. Too often it involves a wholly unnecessary financial outlay—particularly when so many negative or normal reports bear rather damaging testimony to the fact that simple examinations have been neglected or thought enough has not been spent to anticipate the futility of specialistic examinations. There is, of course, much to be said in favor of the 100% complete diagnostic study. It is, however, not attainable or necessary in the vast majority of cases. Billings has recently made the assertion that 70% of all cases can be correctly diagnosed by the intelligent use of our special senses, aided only by recourse to simple and universally available laboratory procedures.

5. The Fundamental Requirements for Good Practice:

If the statements just made are true, it follows that the general practitioner either possesses or can readily avail himself, if he will, of the same diagnostic measures as does the so-called consultant. The latter is his superior, if at all, only by reason of his greater facility and skill, acquired through wide clinical experience, in utilizing the aids to diagnosis which are the common possession of us all. Over and beyond the rational use of these, there are but three things fundamentally necessary for good medical practice. They are:

(a) The daily *exercise* of our intellects. To but few is it given to be brilliant. Presumably most of us start with about the same degree of intellectual capacity. Now that particular level to which an individual rises in terms of intellectual development depends upon the degree and consistency with which he exercises his "mental muscles." It is well known that any muscle in the body can be trained into a state of great power and efficiency by suitably pro-

tracted use. The power of observation, the process of reasoning, the instincts of curiosity and wonder, keenness in special sense perception, and a whole host of emotions are but so many intellectual muscles. They develop and expand by use; they wither and become atrophied through disuse. The practitioner has just as good or perhaps even a better chance to strengthen these muscles than any consultant or specialist, for the simple reason that he is called upon to use them perhaps more constantly, and certainly under a wider variety of conditions. Puzzling cases, referred to consultants too often turn out to be simple problems, unsolved, it would seem, through mental inertia.

(b) Mental muscular development can only be attained through *industry*. This does not begin and end with the conscientious performance of the daily task. For those in the medical profession it means relentless study inspired by a perennial insistent demand for the solution of perplexities.

(c) Last, but by no means least, is *honesty*, not merely in our dealings but in our thinking. Too few of us take the pains to study the origin of our cherished convictions. We are incredibly heedless in the formation of beliefs and become filled with an illicit passion for them when anyone proposes to rob us of their companionship. The world to-day needs sadly more of the intellectual freedom of the Greeks, the "self-detachment and self-abnegating vigor of criticism" so strikingly illustrated in the honest "know-nothingism" of Socrates.

6. The Practitioner's Opportunities to Advance Medicine:

Employing simple methods, governed by the principles just enumerated, the general practitioner can become both a better clinician and an active contributer to medical advancement. But a few of his opportunities can be alluded to here.

A. CLINICAL OPPORTUNITIES:

(1) *The Early Symptoms of Disease:* Every physician should read Sir James Mackenzie's book, "The Future of Medicine," as well as the first volume of work conducted at the St. Andrews Institute for Clinical Research, founded and directed by the same author. Mackenzie believes that disease manifests itself chiefly through the symptoms it produces, and therefore it is of fundamental importance to understand their nature and significance. Such knowledge is urgently needed in the early stages of disease when the symptoms are mainly vague feelings of ill health, noted before the agents of disease have produced functional damage or physical signs. It is probably true that some of the most instructive phenomena of disease occur when no available method can detect structural change or functional perversion. They reveal themselves first by subjective sensations experienced by the patient. Mackenzie believes these can be usefully classified, according to the mechanism of their production, into structural, functional and reflex groups. He makes the astounding statement that there is not a single sensation which man is capable of experiencing that has been thoroughly investigated. Moreover, the study of the effect which the cause of a symptom has upon a patient's life cannot fail to throw much needed light upon the question of prognosis—literally "the foundation of the intelligent practice of medicine." It is not only conceivable but wholly probable that the symptoms of the early stages of chronic disease, with which our hospitals are filled and for the study of which many of our modern diagnostic procedures have been developed, are wholly different from what we have been led to suppose. Such defects in our knowledge hamper medicine in every way. "It seems manifest that if symptoms are ever to be properly valued, it can be done only by those who have the opportunity to watch the individual through long periods of time, who see the disease at its earliest stage, or even before its inception and who can observe its progress through all the vicissitude of life." This opportunity is primarily the practitioner's.

(2) *The Value of Therapeutic Procedures:* No one has such a chance for practical and utilitarian research as has the practitioner, in directing the lines of honest and efficient therapy. Systematic observation in the use of and results secured by drugs used according to the practical classification recently suggested by Barker, will advance medicine materially and spare the public financially. Bear in mind that of the thousands of concoctions which have been swallowed by suffering humanity, but few have stood the test of time and experience. Therapeutic fads are far too prone to sweep like epidemics through our profession. Both physicians and the public are constantly exploited with drugs and nostrums galore, which are too often accepted as all right simply because they bear the name of some widely known concern. It is a harrowing crime to witness the ease with which many doctors prescribe the fallacious glandular compounds bred of the modern endocrine fetish. We are guilty of complicity against the welfare of mankind when we dispense preparations of questionable merit or employ those of accepted worth ignorantly. From time to time there are turned over to the general profession drugs,

reputed to possess particular merits, suggested as the result of careful research studies. It is the practitioner who can finally affirm or refute the usefulness of such compounds. It is practical research to prove or disprove the claims advanced in behalf of benzyl benzoate, for example. It is likewise fraudulent to dispense bacillary tablets to prevent premature senesence or intestinal putrefaction, in the face of such work as that of Bass, Rettger and Cheplin. As a matter of fact, the largest part of the resources of modern medicine in the treatment of the sick, lies outside of the pharmacopeia. Daily remembrance of Benjamin Franklin's shrewd remark, that "he is the best doctor who knows the worthlessness of the most medicines" is the keynote to the practitioner's opportunity to advance therapeutics.

(3) *The Personality Factor in Disease:* Only recently has the medical profession commenced systematically to use psychology in its relation to human behavior under all possible conditions of health and disease. We now recognize that the human mind is the product of the moulding influence of social environment and the operations of certain primary tendencies commonly spoken of as instincts. Environmental maladjustments, certain instinctive hypertrophies, faulty training, impressionistic insults and popularized obsessions may all seek expression through the physical equivalent—somatic symptoms—and produce real or apparent incapacity. It is a fact that physicians well trained in the investigation of special organs or functions take too little note of the emotional and mental reactions marking the action of the human body as a unit. Until the study of human behavior becomes more animated and consistent, a lack of *logical* motive in the work of many physicians is likely to continue. This neglect is one result of the contemporary drive to make medicine a pure science. The pure theorist seems unable to understand that normal regulation of bodily activities is in great measure due to proper mental and emotional adaptations. Disregard of these facts is one explanation for much ill timed surgery; and to it can be attributed the frequent desertion of medicine by patients, and their subsequent misalliance with some cult or other. If we are ever to understand man, his conduct and reasoning, and if we aspire to learn to guide his life and his relations with his fellows, we must cease our traditional and habitual disregard of the mental side of patients. Who has such an opportunity to *know* his patients as the general practitioner? The trained psychiatrist can play but a relatively small part in this personality-factor problem. The point of attack is the home—and during the early years of life—and no one is so truly the logical director as the beloved family physician. The amount of good that can be done by psychotherapy is incredible. Through it, the practitioner can advance medicine tremendously. No one, so well as he, can undermine and uproot some of the grotesque and nauseating psychologic practices of to-day—best exemplified by the full time devotees to the morbid and erotic teachings of Freud.

In the field of personal and community hygiene, the practitioner can contribute his share to preventive medicine. He can aid much in the collection of data needed for the establishment of normal standards—about which we know but little. The progressive practitioner has an enormous field for practical clinical research in stabilizing the worth of many a diagnostic procedure and thereby exerting a dampening influence on the extravagant use of many a "short cut" method. At any and all times there is the chance to study intensively some disease or syndrome of particular personal interest, etiologic elusiveness or therapeutic promise. All that is necessary is sustained effort along some definite line.

B. SOCIAL OPPORTUNITIES:

Just a word as to the social opportunities for advancing medicine. Every doctor should read Barker's essay on "The Wider Influence of the Physician," therein to see even in a reduced perspective *some* of the chances he has for adding to the happiness of the world, thereby contributing to medical progress. Among other things he has many a chance to diffuse useful knowledge, and thus to counteract that which is false or misleading. Take as one example, the ever growing public menace of quacks and pseudo-philosophic cults. They exist as the result of widely believed traditions, and flourish because of unbelievable and amazing popular and professional credulity apparently uninfluenced by education.

Years ago in writing about "Homeopathy and Kindred Delusions," Oliver Wendall Holmes gave a clear analysis of the factors responsible for the existence of cults, and called attention particularly to three:

(a) How easily abundant facts can be collected to prove anything whatsoever.

(b) How insufficient exalted wisdom, immaculate honesty, and vast general acquirements are to prevent an individual from having the most primitive ideas upon subjects he knows nothing about.

(c) The boundless credulity and excitability of mankind upon the subjects connected with medicine.

"The people who take patent medicine, who employ quacks, who resort to Christian Science healers, who seek guidance through spiritualistic mediums or the Ouija board, who entrust their bodies to the manipulations of chiropractors, who consult medical sectarians, or who buy one or another of the well advertised psychologic gold bricks, do so because they believe that their wants will thus be better gratified or perhaps at less expense, than by employing the services of a regular practitioner. This belief is engendered mainly by artful suggestions but it depends in part on the failure of the medical profession adequately to gratify the worthy wants of patients, in part upon the failure of the public to realize that some of their wants are unworthy and that others are beyond the powers of any human being to satisfy."

The situation was well expressed by a certain Dr. Pitt of England, who wrote in 1703, "The profession of physic has been openly assaulted or secretly undermined by all of the quacks and ignorant or unlicensed practitioners, but it has suffered much more from the impudence, ignorance, or imprudence of many physicians." There is little ground for us to storm and give vent to indignant rage because of inroads into our practice by the faith healer and such an archfiend as the contemporary Abrams. We are forced to bear the burden of professional neglect along these lines whether we want to or not. We must cease thinking that the license to practice is a form of professional protection; it is not. It is an earnest of protection to the public. The public, however, must be educated not to expect a sufficient supply of competent practitioners until it wants them enough to offer the incentives and rewards which will attract honest, fearless men into the medical career; such a want will not be expressed until physicians, acting as instructors and counsellors regarding the nature of disease, truthfully admit their own unavoidable inefficiencies and dispassionately teach the limitation of illfounded dogmas.

The physician can exert a powerful influence in shaping the economic conditions of his state and country. He can advance the standing of his profession by an energetic interest in the problems of general education, and his voice should be heard in the shaping especially of medical curricula, through the agency of influential medical alumni associations. He can do a great deal to insure that the human being born, should be well-born, and with knowledge available and ever increasing, he can help to arrange the lives of people in such manner as will favor right thought, right feeling and right conduct.

CONCLUSIONS

In a fragmentary way an attempt has been made to point out some of the dangers which confront the general practice of medicine, as well as relatively simple ways and principles by which these dangers can in part be counteracted. It would be absurd to infer that the author in any way minimizes the importance of research or the value of modern laboratory and specialistic types of study. It is clearly recognized that specialism must always remain. Public opinion, however, seems to point to a dissatisfaction in current medical practice, and this in turn has been reflected upon the number and morale of general practitioners throughout the country. There is no reason whatsoever why this should continue. The general practice of medicine offers countless opportunities, not merely for making a living, but for providing the daily stimulus essential for the conduct of any progressive profession. From the direction which the newer and more scientific developments in medicine are taking, there is grave danger that the increased emphasis upon this important phase of the education of the doctor may cause the humanitarian and altruistic aspects of the subject to be neglected. After all, internal medicine is medicine itself—to which all specialties, surgery included, should be judiciously subservient. The dominant thought in writing this paper has been the conviction that successive generations of sanely trained internists will rise up to restore public confidence in medical practice and place both the science and art of medicine where they belong. "He who is in medicine both to advance our knowledge and to alleviate suffering, remains as always, the ideal physician."

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh): I feel there is nothing that I can add to the things Dr. Miller has said in such a masterly way and in a style that

is as delightful to hear as it is rare. And I shall only emphasize one thing—that all of us are endowed with the same five senses; after that, it is up to each man to develop, within the limits of his capabilities, his judgment. And based on that judgment and his knowledge, should come a proper degree of confidence, always tempered with humility, as Dr. Miller has said.

I was particularly glad to hear Dr. Miller speak as he did of laboratory procedures. It is essential to realize that a laboratory test should never furnish a diagnosis. It may be the determining factor in a diagnosis, but only where considered in conjunction with the history and physical findings. It is, therefore, incumbent on the practitioner to realize the value and limitations of a given test, and also to have such tests done by individuals known to be responsible and reliable.

The general practitioner is in a position to know the patient well; his habits, his surroundings and his idiosyncrasies. The consultant sees the patient only a few minutes. He has a chance to observe only one phase and he cannot know the patient as his own physician does.

I think I have said enough, and I want to express my gratification at having heard Dr. Miller.

THE CLINICAL MANIFESTATIONS OF PRIMARY CANCER OF LUNG*

W. W. G. MACLACHLAN, M.D.
PITTSBURGH, PA.

During the year 1921 four cases of primary cancer of the lung were observed on the medical service of the Mercy Hospital. All came to autopsy. In one instance the true nature of the pulmonary condition was not recognized at the bedside but in the others the clinical diagnosis was confirmed. It is only fair to add that in the cases where the correct clinical interpretation of the lesion was made, considerable detailed study was essential. The object, therefore, in presenting this small group is to call attention to the clinical manifestations as indicated in our material. However, it might be advantageous to touch briefly upon some of the cardinal points pertaining to the pathogenesis and the occurrence of this neoplastic process.

Ewing states that one per cent of the autopsies of cases dying from malignant disease show a primary cancer of lung. The percentage is much smaller if reckoned on the basis of the total autopsy number, as the figures given by Lord (105 primary cancers of lung in 46,169 postmortem examinations, or about 0.3 per cent) would indicate. Moise, who last year reported five cases, states that it is possible that the recent influenza epidemic may have had some part to play in the apparent increase in the number of cases of primary cancer of lung. During the past year we have seen four times as many cases as we had observed in the previous eleven years. It may be, therefore, that the statistics on primary cancer of lung at the present time are somewhat different from those of pre-epidemic days. Moise found 5 cases in 375 autopsies, or 1.38 per cent. We have had 4 in 231 postmortems, or 1.7 per cent. Prior to the epidemic our percentage was about the same figure as given above by Lord; but as we have not observed a case for a period of a year it may be that the disease is returning to its normal incidence, in which case, we would be justified in referring to primary cancer of the lung as a rare disease.

Cancer of the lung occurs almost three times as often in the male as in the female. Three of our cases were males. Reports show that the largest number are seen between the ages of 40 and 70, which is in keeping with the general rule for cancer. Three of our group were between 50 and 60. The other, the female, was 42.

As in cancer elsewhere the factor of chronic irritation from various cases has been advanced as having a bearing or an etiological relationship to the subsequent neoplastic formation. Cobalt miners in the Schneeberg region of Saxony are prone to develop cancer of lung. Pneumoconiosis is suggested as being responsible. Anthracosis must have little or no pathological relationship to cancer of lung. Pulmonary tuberculosis is at times an associated disease, as cancer has been known to develop in an old tuberculous cavity. A few years ago Haythorn showed very clearly that chronic infection in the bronchi and bronchioles, at times led to destruction of the basement membrane, with a subsequent change in the lining epithelium from the normal columnar cell to a squamous cell. This change, termed metaplasia, undoubtedly comes under the group of conditions which are referred to as a precancerous state. It is our belief that chronic infection of the bronchioles with metaplastic changes of the lining epithelium bears a closer relationship to the squamous cell cancers of the lung than does tuberculosis. In this connection the case reported by Henrici is important, for he was able to demonstrate in the microscopic section both a squamous cell cancer of lung and a typical metaplastic change to a squamous epithelium in the broncial lining. It is, furthermore, interesting to note, as Moise points out, that very destructive lesions of the bronchial walls were produced by epidemic influenza and that in organization much hyperplastic epithelial overgrowth, at times very difficult to differentiate from neoplastic change, was encountered. Moise suggests that possibly

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the reason for the post-epidemic increase of primary cancer of lung lies in this fact. Winternitz and his coworkers were able experimentally to produce changes in the bronchi and bronchioles, of a character identical with those of the epidemic, by the insufflation of hydrochloric acid. Irritation of a degree capable of destroying the basement membrane of the lining cells of the bronchi led eventually to a regeneration which, at times, was so hyperplastic as to assume features similar to new growth. We must not, however, forget that chronic irritative bronchial conditions are not by any means rare; in fact, they are quite the opposite, but yet under normal conditions this tumor formation is a very rare finding. One wonders if cancer of the lung has been see to any unusual extent in those individuals who were severely gassed during the war. It seems not unlikely that the irritative or destructive agent in the bronchial lining must be of a certain intensity. As Haythorn observed, it must destroy the basement membrane, in order to call forth abnormal cellular responses which, in certain instances, may even go so far as to enter the realm of neoplastic growth. In only one of our cases did we find evidence of much prior infection. This case showed a chronic tuberculosis, generalized blastomycosis with marked pulmonary involvement, and syphilis, the latter being proved by history, serology and specific aortitis. The presence of three granulomatous infections in the chest of one individual in addition to a neoplasm is a rather bizarre combination.

Cancer of the lung arises from the lining epithelium of the bronchi or bronchioles, the alveolar epithelium, or very rarely from the mucous glands which surround the larger bronchi. The epithelium of the larger bronchi near a bifurcation is the common source, and the type cell is often squamous in character, at times producing very typical keratinization, as seen in skin cancers. This characteristic feature, however, cannot always be made out, although other minor details are usually demonstrable so as to indicate the squamous nature of the tumor cells. Some reports show that columnar cells, having the function of secreting mucus and forming gland-like structures, tend to predominate. It is on this evidence that an origin from the mucous glands was considered to be proved. Moise takes issue with this idea and points out that the lining columnar cells of the bronchi have also this function of secreting mucus. He doubts that the mucous glands are responsible for many primary cancers in the lung. We agree with him. Probably the commonest type cell of all is an undifferentiated polyhedral one. The origin of this cell is most likely from the lower layer of the bronchial epithelium. It seems very improbable that the alveolar epithelium plays an active part in the production of this growth. There are but few authentic cases of this latter type reported. All types of cells may be found in different parts of the same tumor. After the growth has reached an advanced stage of development it is almost impossible to say exactly from what point or from what cell it arose; but it is more than likely that the lining cells of the bronchi are in most cases responsible. The different microscopical features depend upon the varying degrees in differentiation. Squamous cell tumors, we believe, indicate previous metaplasia. Two of our group were of this type; the others were of the polyhedral character.

The tumor may be seen in the lung in various forms—a localized growth with a tendency to be somewhat definitely outlined, a massive lobar involvement, a diffusely scattered large miliary form and the most frequent type, the spreading, somewhat branching structure, extending from the bronchi near the hilus of the lung. These divisions are not absolute, as it is not uncommon to find two or more forms represented in one case. The extension of the malignant growth to the pleura, a point of considerable clinical importance, is possible in any type of growth. The tumor metastasizes to the regional lymph-nodes of the thorax with almost certain regularity, while the spread of the tumor cells elsewhere in the body is not an outstanding feature in our cases, but in many of the reports in the literature general metastasis is not uncommon.

Hamman suggests that the clinical manifestations of primary cancer of the lung simulate one of three processes, namely, chronic lung infections, local tumor and pleurisy with effusion. He states that early in the course of the disease the diagnosis is often difficult to make, but later on it may become very clear, while at times the neoplastic process is only discovered at autopsy. This has also been my impression of the condition from the limited number of cases available for observation. The diagnosis is made more by exclusion than by pathognomonic signs. One can readily realize that the symptoms and signs of cancer of the lung may vary considerably, depending upon the location of the tumor. Some of the clinical features which have been described in studies of the disease have been wanting in our series.

Pain is a very important symptom and was present in all of our cases. The type of pain

varied from a dull aching to an acute, agonizing, stabbing sensation, causing the patient to cry out. When the pain was dull it was more or less constant, while in the two patients with the acute type of pain the attack assumed a periodic character. The seat of the pain in all cases seemed to lie deep in the chest, but in the acute types it was also referred at times to the epigastrium and to the left arm. These attacks became more frequent as the disease progressed and appeared to be more intense, as the narcotic used had to be given in much larger doses to allay the suffering. The pain occurred more often at night than during the day. Pain may be independent of the pleura, as in our most acute example the pleura, at autopsy, was free from tumor involvement.

Dyspnea was evident in all four cases on very slight exertion, as in sitting up in bed or even, at times, in changing the position to only a slight degree. This symptom progressed as the illness advanced. While the patient was resting the dyspnea was not noticeable. Dyspnea and acute pain often were associated. Cyanosis was present in one case but absent in the others.

In one patient coughing was practically absent, but in the others it was evident, although somewhat variable in nature. We would not say that there is any typical cough, but we would call attention to a dry, hacking, spasmodic cough which was usually associated with an attack of dyspnea and considerable pain. This type of coughing usually continued for two or three minutes, and it was following these attacks that bloody sputum was often observed. More or less constant but not excessive coughing, with a very moderate amount of mucoid sputum, was noted in the two remaining cases.

One may derive much information from the sputum. Blood was present in the sputum in all of our cases at some time during their course. In one, the currant jelly sputum was frequently seen, but in the others it was usually the bright red tinged sputum, often obtained after a paroxysm of coughing. A few years ago I saw a patient where a fresh bloody sputum, almost pure blood, was the outstanding feature. In this case a piece of squamous cell cancer about the size of a split pea was recovered from the sputum. This should always be kept in mind where neoplasm of lung is suspected, but great care should be exercised in the diagnosis of tissue of this character. Repeated examinations of the sputum for tubercle bacilli, and a thorough searching of unstained specimens for fungus growths is an essential part of the examination. The finding of tubercle bacilli as a rule will make the diagnosis of cancer of lung, at least clinically, almost untenable, even with the knowledge that these two conditions are sometimes found in the same case. One of our patients illustrated this point. It is the negative findings (tubercle bacilli and fungi) in the sputum that are of most value in attempting to make a diagnosis of cancer.

The physical signs are not in themselves distinctive of neoplasm in the majority of cases. When the pleural involvement responds by an outpouring of fluid, the signs of effusion naturally are present. This may be so evident that little or no information may be obtained from the lung lying beneath the fluid collection. The fluid in these cases may be blood-tinged but not always so. The rapid reaccumulation of fluid after removal is the rule rather than the exception. I have recently seen over two litres of clear fluid removed on each of twelve different occasions in the course of two months, in a case of neoplasm of the lung, probably lymphosarcoma of mediastinum and lung. Bloody fluid suggests neoplasm but may also be characteristic of tuberculosis. One of our cases had a most extensive pleural involvement by the new growth but there was no fluid present in the cavity. Pleural effusion was seen in only one of our group, and in this case the physical signs were those of an effusion.

Dullness on percussion, usually unilateral over the lower lobe, diminished vesicular breathing and voice sounds and a moderate number of râles appear to be most constant. These signs are not unlike the delayed resolving lungs of the post-influenzal days, or even the chronic bronchopneumonias of the last few years, although in some instances this comparison is not good, as non-resolution is often accompanied by increased breathing and voice sounds and is not infrequently bilateral. The presence of basic and the absence of apical signs is the rule, except when the growth lies in the upper lobe. The finding of blowing breathing over these localized tumor areas has been noted, but in none of our group was this observed. The growths at the hilus of the lung may be very obscure in the early stages, prior to the extension of the tumor tissue into the parenchyma of the lung. One of our cases was of this type. There were no abnormal physical signs to be made out; the patient, however, had deep mediastinal pain and difficulty in swallowing due to pressure on the esophagus. Later, there was abundant unilateral evidence in the lung of pathological change as the tissue was invaded by the new growth.

It is my belief that the earliest recognition of a tumor having its origin in the lining of the accessible bronchi, could be made by bronchoscopic examination. There is undoubtedly a stage in the development of these tumors when this would be the only method of diagnosis by physical signs. Weller has referred to this previously in a pathological study on cancer of lung, and it is my impression that Chevalier Jackson has demonstrated this fact clinically. We are loth to admit that none of our cases were examined by the bronchoscopic method. In expert hands it is possibly the earliest and most accurate method of arriving at a diagnosis.

The roentgen ray findings have been to me a disappointment. In one of our cases the diagnosis of cancer of the lung was made many weeks before the roentgen ray department would volunteer a similar opinion, even with the knowledge that neoplasm was considered. In two cases the diagnosis by roentgen ray was "no neoplastic growth." One of these was recognized clinically, while the other was discovered at the autopsy table. In the case which presented pleural effusion and which was diagnosed clinically as cancer, no neoplastic growth could be made out by roentgen ray on account of the dense shadow produced by the fluid and thickened pleura. It is, therefore, my impression that in the early diagnosis of cancer of the lung the roentgen ray is not as valuable as other methods. This does not, however, apply to mediastinal growths, nor does it in any way indicate that complete roentgen ray work on these cases should not be done.

Three of our cases were febrile. There was considerable variation in the fever, ranging from a high intermittent type to a slight daily rise. Occasionally, periods of a few days of normal temperature occurred, to be followed by a febrile course. Many of the cases collected by Weller showed no temperature reaction. However, more recent observers, as Hamman and Moise, regard the presence of temperature as being almost typical. Certainly our cases were of this group. There was a moderate leucocytosis in all of our patients and in one the count rose to a little over 20,000. Finally, progressive loss of weight and strength, beginning in the early stages of the disease, associated with visible signs of emaciation towards the latter part of the illness, completes the picture.

The duration of the illness is, of course, difficult to estimate accurately, in so far as it is impossible to date the onset with any degree of certainty. Some of the reported cases collected by Weller entered the hospital in a moribund condition and died shortly after admission. The diagnosis of primary cancer in this type of patient is practically always made at the autopsy table. One of our group, the patient presenting the three different types of granuloma, died a few days after admission. Cancer was not even suspected. As far as we could learn from the man, he had been well and working two months previous to the time of his entrance into the hospital. In two cases, the duration appeared to be between five and six months, and in one almost eight months.

In an individual of middle age, with a normal heart and aorta, who has been losing weight and strength and who presents such symptoms and signs as pain in the chest, dyspnea, cough, fever, blood-tinged sputum, with local evidences of unilateral basic lung involvement, having no tubercle bacilli or fungus growth in the sputum, with syphilis eliminated as far as possible, suspect a neoplasm of the lung.

Mercy Hospital.

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DISCUSSION

DR. GEORGE MORRIS PIERSOL (Philadelphia, Pa.): I think the value of a paper such as we have just heard, is that it again emphasizes the fact that there are chronic pulmonary conditions other than tuberculosis that we should bear in mind, notably primary neoplasms of the lung. The recognition of primary carcinoma of the lung depends upon knowing that such a condition may exist, more than upon anything else. It does seem, as the speaker has just said, that pulmonary carcinoma is more frequent than formerly. Whether this is due to the recent influenza epidemic, or is merely the result of improved diagnostic acumen, I do not know.

In 1913 Dr. Sailu and Dr. Toney found that in every thousand deaths 156 are due to primary carcinoma of the lung.

My feeling is that the condition is more common than we think, and is not recognized as often as it should be because those who have charge of patients with chronic pulmonary conditions do not bear in mind the possibility.

In the last three years, at the Philadelphia General Hospital, during the four summer months, each year we have had one case of primary carcinoma of the lung. Of these three cases two have gone to autopsy; the third case we still have under observation. One case was as old as fifty-eight; the youngest was thirty-eight. In every case the onset has been insidious and we have been impressed by signs and symptoms that correspond to those about which you have heard. In every instance pain was the first symptom. In one instance, when the pain was severe from the beginning, the patient became a morphine addict before he succumbed. The ribs as well as the vertebral column

were eroded. Sooner or later a cough developed but not particularly significant in the early stages. Cyanosis was absent. Every one of these cases at the start, however, was suspected of being tuberculosis.

Their sputum was examined, in one case as often as twenty-five times, and always with negative results. It is important to keep this fact in mind: the cases seem to be tuberculosis, yet the sputum comes back negative repeatedly. They go to autopsy and you find that there really is no tuberculosis present at all. The negative sputum examinations, therefore, were significant.

As emphasized a little while ago, all the signs and symptoms should be looked upon as aids; none should be depended on entirely, but all should be heeded. In pulmonary carcinoma there may be carcinoma cells in the sputum. Both of the cases that went to autopsy had marked clubbing of the fingers.

So far as experience with x-ray is concerned, our experience has been more encouraging than that of the reader of the paper. In all cases we give credit to the x-ray for having sent back a report we ultimately found correct. In every case the skiagrapher reported a neoplasm of the lung, not of tuberculous origin. In our experience the x-ray has been exceedingly helpful, and I confess the original x-ray diagnosis of neoplasm in one of the cases was at first scoffed at. It is at least a very valuable adjunct and help. However, it is not always available, and the important thing to emphasize is to use our own senses and the things we have at hand for making this diagnosis.

The diagnosis can be made if we will bear in mind the fact that carcinoma of the lung is apt to exist, and not become obsessed by the idea that every patient must have tuberculosis.

Remember that most of the carcinomas of the lung begin not at the apices but at the root or at the bases. In the last two or three years we have emphasized the fact that given a lesion above the center of the chest and it is usually tuberculosis. But when the lesion lies below, at the bases, be very skeptical of its tuberculous nature. At least we should be on our guard when we find physical signs in the lung below the middle of the chest. In addition, then always make repeated examinations of the sputum.

Another diagnostic difficulty is the likelihood of calling these neoplastic lesions pleural effusions.

The paper we have just heard is extremely useful because it focuses attention on nontuberculous chronic pulmonary lesions.

Dr. Albert E. Roussel (Philadelphia, Pa.): Some years ago at the Howard Hospital we performed an autopsy on a case that came in at the last moment with primary carcinoma of the lung. But I want to call attention to the fact that secondary carcinoma of the lung is more frequent than we give it credit for. We have seen ten cases in the last five years, most of them in women, following carcinoma of the breast, and one case of sarcoma of the lungs in a girl of twenty years, occurring two years after removal of the leg for the same disease. In most cases pleural effusion is the main factor, and the effusion is apt to be bloody. The history of previous malignant disease aids the diagnosis.

I want to emphasize that secondary carcinoma of the lung is a comparatively frequent condition.

Dr. Irwin J. Moyer (Pittsburgh, Pa.): In regard to the difference in the physical signs—I examined a case in Pittsburgh in which I could not satisfy myself as to what was the trouble. There are other conditions which may have very much the same symptoms as tuberculosis or carcinoma. I finally diagnosed the case as a neoplasm, and it proved to be so. The condition was chronic, but the physical signs did not indicate tuberculosis.

Dr. MacLachlan (in closing): Unfortunately, I took up too much time on some of the interesting things in etiology. There are two points which I neglected to mention to which I now wish to refer. I believe that it has been shown by Chevalier Jackson that bronchoscopic examination may clear up the diagnosis in a case of this type. Strangely enough in the series of cases reported by Weller and by Moise they both recommended bronchoscopic examination, although these examinations were not done. I similarly, recommend it, although it was not done on any of my cases.

It is possible to find masses of tumor in the sputum, although great care should be taken in making a diagnosis from tissue of this type. I have seen one case of this character where the diagnosis was very easily made. Of course, it is merely guesswork to attempt to diagnose cancer by finding a few individual cells.

THE IMPORTANCE OF PHYSICAL FACTORS IN THE PROGNOSIS OF RENAL INFECTIONS*

LEON HERMAN, M.D.†

PHILADELPHIA, PA.

SOME CONSIDERATIONS IN THE PATHOGENESIS OF RENAL INFECTIONS

Pyelitis, or pyelonephritis, is the most common type of infection of the kidney, and it is with this variety that we are now concerned. Thus, at the outset we eliminate from detailed consideration that not inconsiderable group of acute suppurative lesions which are generally conceded to be the result of the renal implantation of blood-borne pyogenic bacteria. Attempts to segregate clinical varieties and pathological entities from the many and varied activities of infection in the upper urinary tract have met with considerable, but by no means complete, success.

Microörganisms in the blood stream may be delivered to the kidneys in pure or mixed cultures, but a primarily pure culture in the kidney may be augmented or entirely destroyed by the subsequent addition of other organisms. Cabot and Crabtree are strongly of the opinion that the lesions produced in the kidney by the cocci and pyogenic bacilli differ essentially from lesions produced by nonsuppurative organisms, such as the colon-typhoid group, the former causing cortical lesions, the latter giving rise chiefly to pyelitis and its sequelæ. If hard and fast rules regarding bacterial localization in the kidney

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†Urologist to the Methodist Hospital of Philadelphia, Assistant Surgeon to the Pennsylvania Hospital of Philadelphia.

could be drawn, the determination of the type of invading organism would be of the greatest prognostic significance, and upon this determination would depend the proper method of treatment. There are good reasons for believing that the pus producing cocci have a special affinity for the renal parenchyma, but there is equally good evidence to prove that this group of microörganisms is capable of producing disease in parts of the kidney other than the cortex. Infections localized in the cortical portions of the organ could scarcely be treated successfully by pelvic lavage.

We meet with certain cases of coccal pyelitis which are difficult or impossible to cure by lavage, while others respond to local treatment equally as well as colon bacillus infections. The latter, which are generally supposed to be more or less limited to the pelvic mucosa and adjacent segments of the tubules and, therefore, suitable for local applications, may prove most rebellious to treatment, but of the two types, the colon bacillus infections are far more responsive to pelvic lavage.

Bumpus and Meisser regard the colon bacillus as a secondary invader, the initial infection, in their opinion, being streptococcic in type. A contrary view is expressed by Harrold, who has succeeded in isolating colon bacilli from the cervix uteri, and from the feces of patients with pyelitis, which corresponded in serologic and biologic tests to the bacilli recovered by catheter from the infected kidney. Additional support to the view that the colon bacillus is the primary invader is found in the observations of Kowitz, who found this organism in the blood of five children suffering with infectious diarrhea and soon thereafter, first albumin, then colon bacilli and finally pus in the urine. In the study of stained tissue sections from sixty cases of suppurative nephritis, Cabot and Crabtree were able to demonstrate the presence either of bacilli alone, or of a mixed infection in fifty per cent.

It would seem that there is a tendency to ascribe to the various bacteria a too circumscribed specificity in the production of inflammatory lesions of the kidney. Renal lesions produced by any given variety of microörganisms probably vary within the widest limits, and as a rule the factors determining these variations are difficult to demonstrate, either by clinical means or in the study of operative or postmortem specimens. It is likewise impossible, in most instances, to retrace in sequence the bacterial steps in the production of any advanced inflammatory lesion of the kidney. Figure No. 1 shows an enormous pyonephrosis removed from a girl of 14 years referred to us by Dr. Torrence Rugh of Philadelphia. This patient had, in addition to the genito-urinary infection, chronic tuberculosis of the spine, knees and the right elbow joint. While the major pathology in the kidney was a colon bacillus pyonephrosis, nevertheless tuberculosis was found microscopically in the thin shell of kidney parenchyma. In this instance the colon bacillus had caused destruction of the diseased kidney, transforming what would in all probability have been a massive caseo-cavernous tuberculous kidney into a pyonephrosis with no gross evidence of tuberculosis.

If we align ourselves with those who maintain that the pyogenic cocci have a predilection for the renal parenchyma, we must assign to the complex anatomy of these parts an important mechanical influence in prognosis.

Drugs in solution, when injected into the renal pelvis, are quickly diffused throughout the kidney substance, but it is questionable if drugs thus injected could have a sterilizing effect on bacteria resident in peripheral portions of the cortex. O'Conner has shown that within twenty minutes after the injection of mercurochrome into the pelvis of the dog's kidney, the drug has reached the glomeruli by passing directly up the lumen of the tubules, but that this diffusion is marked only at the poles of the organ. Metallic silver was found in the most distant collecting tubules after the injection of silver nitrate. The same author maintains that bacteria usually localize in the submucosa of the pelvis and pyramidal tips, and less frequently in the convoluted tubules and lymph vessels surrounding them. The anatomical effects of bacterial localization in the pelvic structures are usually evidenced in the pyelogram, involvement of the true pelvis being characterized by muscular atony and expressed in the pyelogram by varying degrees of pelvic dilatation, the involvement of the pyramidal tips and adjacent mucosa being shown by blurring or feathering of the minor calices. (Fig. No. 2.)

Marked dilatation of the true pelvis and decided changes in the minor calices, in the absence of mechanical obstructions in the ureter or lower urinary tract, are of evil prognostic significance, especially if associated with marked lowering of renal function. Dilatations of the true pelvis due to mechanical influences alone or in association with mild infections are usually recovered from with surprising rapidity after removal of the obstruction. This is especially true of the pyelitis of pregnancy in which the pelvic capacity may be greatly increased, but in

which it becomes rapidly restored to the normal after delivery of the child and appropriate local treatment to the infected pelvis.

The problem of ascending renal infection remains unsolved, but it would seem to play a

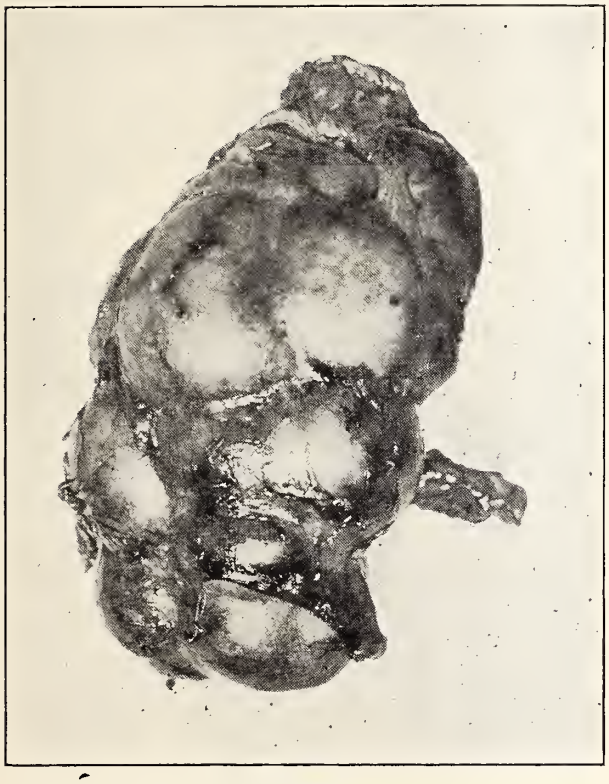


Fig. No. 1

Large Pyonephrosis. Areas of tuberculosis found in the small remaining portions of the parenchyma. The patient had Pott's disease and tuberculosis of both knee joints and the right elbow.

minor rôle in the incidence of pyelitis. Cabot and Crabtree admit the probability of its occurrence only under two conditions, namely, in the presence of ureteral obstruction or in the presence of an incompetent ureteral sphincter with back pressure. They quote the studies of Crabtree who obtained positive blood cultures for B. coli in forty per cent of thirty-two cases of pyelitis, and on the basis of this and other evidence conclude that the theory of ascending infection, as far as pyelonephritis is concerned, is "wholly mythical."

Infections primarily localized in the pelvic mucosa probably ascend the uriniferous tubules in many instances. A blood-borne infection may traverse the renal tubular system apparently without causing inflammation and become engrafted on the pelvic mucosa, which latter, being highly absorptive, becomes the source of repeated blood infections. It is unlikely that such absorption is a continuous process; that it occurs intermittently seems probable in view of the tendency of chronic pyelitis to acute exacerbations with associated systemic symptoms and bacillemia. Magoun has furnished us with convincing evidence that the infected pelvic mucosa may serve as a focus of repeated blood infections, and it is conceivable that in this manner, the renal parenchyma may eventually become involved in a case that was primarily an uncomplicated pyelitis.

The clinical histories of many patients with bilateral pyelitis indicate that the infections do not occur simultaneously. It is possible that one kidney may become infected with bacteria of foreign origin, and later become the source of infection to its fellow on the opposite side, by repeated reinfections of the blood stream. The lymphatic transmission of bacteria from one kidney to the other is merely a theoretical possibility; infection localized to one-half of a duplicated pelvis would seem to indicate that the lymphatic transmission of bacteria in the renal tissues is unlikely. (Fig. No. 3.)

The Production of Lesions in the Normal Kidney During the Elimination of Bacteria

The long continued excretion of bacteria and bacterial toxins may give rise to the development



Fig. No. 2

Pyelogram of case of non-complicated pyelitis. Note the indefiniteness (feathering) in the outline of some of the minor calices. This, we believe, is due to inflammation of the pyramidal tips.

of isolated patches of interstitial nephritis; while chronic bilateral pyelonephritis according

to Braasch, often leads to terminal renal insufficiency, and at death the kidneys are found to be "somewhat smaller than usual and characteristic pathologically of chronic interstitial ne-



FIG. No. 3

Pyelogram of duplicated pelvis with pyonephrosis of the lower pelvis. The upper pelvis has entirely escaped infection.

phritis, and to have many areas of round cell infiltration, and a slight degree of dilatation of the renal pelvis and ureter." Unilateral examples of a similar if not identical process, constitute a distinct clinical entity, namely unilateral atrophic pyelonephritis. (Fig. No. 4.)

So far as we can determine, the normal kidney is subject to infections in the entire absence of any anatomical or functional predisposition. The predetermining influence of bacterial toxemia on the kidney antedating the actual implantation of the bacteria is largely conjectural, but there are good clinical reasons for believing that toxic nephritis may antedate the bacterial nephritis or pyelitis. This was well shown in the observations of Kowitz already quoted, while the same sequence of events seems to have taken place in a case of osteomyelitis followed by renal infection and calculi formation in the following case:

Acute osteomyelitis of tibia; spontaneous fracture of neck of femur; bilateral pyelonephritis (pyonephrosis on left side with calcification; multiple bilateral ureteral calculi).

This case previously reported by Dr. Arthur Billings. The following is a brief abstract of the history and findings:

M. T., an Italian boy of nine years, was admitted to the surgical service of Dr. Gibbon in the Pennsylvania Hospital 6-17-21. Two months previous he had had a tonsillectomy. The diagnosis on admission was acute osteomyelitis affecting the left tibia. Dr. Klopp opened and drained the bone on the day of admission. July 13, 1921, Dr. Billings did a subperiosteal resection of the entire shaft of the left tibia and a curettement of the lower end of the adjacent femur. August 3, 1921, left knee joint was aspirated; no pus found. Spontaneous painless fracture of right femoral neck occurred. January 23, 1922, cystoscopy (Dr. Herman). Local anesthesia. Bladder normal. Ureteral orifices normal. Catheters passed to each kidney pelvis. Urine from both kidneys cloudy. No apparent obstruction in ureters, although x-ray shows shadows suspicious of stone. The day after cystoscopy the patient passed a stone per urethram, and several days thereafter several more. All of the stones with the exception of one were passed. X-ray of urinary tract (Dr. Bowen). This is the final report of the many which Dr. Bowen made concerning the kidney. April 25, 1922, the shadow in the left kidney is becoming more and more organized; that is, taking on more of the appearance of calculi. Of the six or seven shadows noted previously in the line of the ureters only one remains. (The patient passed the others per urethram.) This one has a diameter of approximately 1 cm. and lies on the left side. The left tibia shows a satisfactory regeneration. It is out of the question to give all of the x-ray and laboratory reports but it is interesting to note that on admission the urine contained only 2 pus cells per microscopic field. On 7-13-21 the urine was pus free. It was only after 8-4-21 that pus was found in the urine in quantity. Pus from the diseased bone contained staphylococci in pure culture. The same organism was recovered from the bladder urine and from the two kidney pelves. Unfortunately, the stones were not cultured. I am of the opinion that the urinary infection (and calculi formation) in this case followed the osteomyelitis and was blood-borne. It is highly probable that the primary infection was tonsillar.

An apparent acute onset of the urinary infection led to x-ray examination of the urinary tract when the evidence of calcification of the left kidney and the



FIG. No. 4

Atrophic pyelonephritis with solitary cyst. The latter was filled with sebaceous-like material and resembled a dermoid. Patient seen in consultation with Dr. John Carson and Dr. Arthur Billings. Operation by Dr. Billings.

presence of ureteral stone was found. The acute symptoms were apparently the result of an acute exacerbation of a chronic infection which came on insidiously after the patient had been in the hospital some time, as witness the normal urine found during the first month of hospital residence.

LOCAL PREDISPOSING CAUSES OF RENAL INFECTION

Although it is probable that the normal kidneys may become infected, there are certain functional and structural abnormalities of these organs which predispose to bacterial implantation and which probably antedate the onset of infection in the majority of instances. Not only do such factors predetermine the lodgment of bacteria in the kidneys, but they prolong the infection and sometimes render it incurable. Upper urinary stasis, the causes of which are legion, is by far the most frequent of these conditions, but an apparent contributing cause to the infection may in reality be the result of such infection and the differentiation between cause and effect is often extremely difficult.

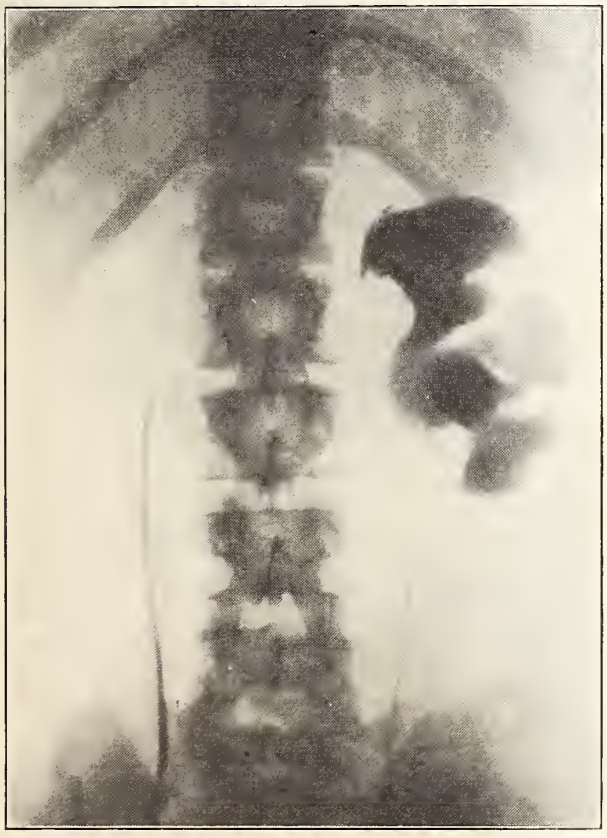


Fig. No. 5

Hydronephrosis affecting the calices for the most part. The true pelvis is comparatively small. This is probably a congenital condition. There was no infection present.

By no means all renal pelves with residual urine become infected. Figure No. 5 shows the pyelogram of the left kidney of a girl aged 14, which is greatly dilated, but the cause of which was not determined. There was neither infection, nor a mechanical obstruction present in this case. We have seen cases of hydronephrosis due to impacted ureteral stones and complicated by acute cystitis in which sterile urine was obtained by catheter from the dilated pelvis.

Mark and Hoffman report cases of hydronephrosis with ureteral obstruction caused by chronic seminal vesiculitis, in which, notwithstanding the predisposition created by upper urinary stasis, infection had failed to occur. In the case described below, a periureteral abscess had caused partial obstruction of the ureter, yet the upper urinary tract had escaped infection. These examples serve to illustrate a well recognized fact; namely, that notwithstanding the presence of mechanical factors favoring infection, the latter fails to materialize in certain instances. If we assign the elimination of bacteria from the blood stream to the kidneys as a normal function, it becomes doubly difficult to explain the failure of infection to take place in these rather exceptional instances.

T. J. S. Male, aet. 33; physician. Chief complaint, burning on urination; frequency; feeling of fullness in perineum.

History of present illness: In 1918, while in army, was taken with sudden acute lower right abdominal pain; slight fever and leucocytosis (19,000). Operated for acute appendicitis. Normal appendix removed. Following operation had a very severe attack of the same pain; this accompanied by hematuria. Had repeated attacks after this, requiring morphine. In 1919 noticed urethral discharge and nocturia. Was cystoscoped and impacted stone found in lower end of right ureter. The stone was broken during the manipulations and half of it was passed, the other half coming away spontaneously six months later. In the fall of 1919 was cystoscoped again on account of burning and frequency and a tentative diagnosis of tuberculosis made on the evidence of lymphoid bodies in the deep urethra. An examination for pulmonary infection was negative. X-ray examination of the urinary tract negative. Lately he has complained of pain in the left testis and left hip.

Examination 2-26-22. External genitalia. Right was somewhat thickened. Small cyst of cord. Epididymis (r), slightly thickened globus major. Left testis somewhat atrophied. Prostate slightly enlarged; smooth and firm. Left vesicle palpably enlarged and somewhat indurated. Urine contained some pus shreds. General physical examination negative.

Cystoscopy 3-7-22. Bladder urine contained flakes of pus. Deep urethra congested. Bladder mucosa normal. In region of right ureteral orifice there was some congestion and edema. Catheters passed with ease to the pelvis of each kidney and urine obtained from each kidney which was perfectly normal chemically, microscopically and culturally. While observing the catheters in situ a thick stream of pus was seen pouring from the right ureter with each ureteral peristaltic wave, around the catheter which at the time was draining normal urine from the kidney pelvis. Approximately one dram of pus was recovered from the bladder after the ureteral abscess had emptied itself. A ureterogram failed to show a diverticulum, although it is obvious that the patient had an abscess at the former site of the calculus. Advised dilatation and local treatment.

The traumatized kidney is altered structurally although the changes may consist merely in slight

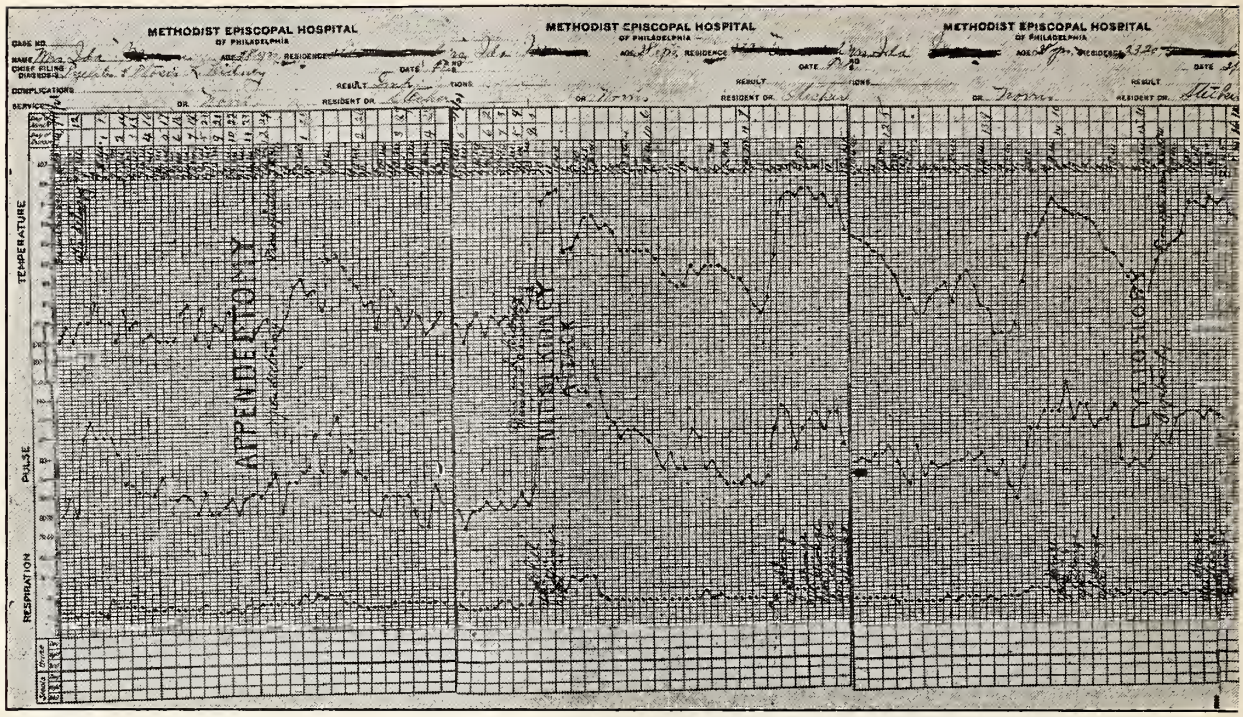


FIGURE No. 6.—Acute pyelonephritis in movable kidney (left). The movable kidney complicated pregnancy and labor. The kidney infection occurred after appendectomy during puerperium. See clinical history. Note the onset of the kidney infection

degree of congestion. This predisposes to infection, as clinical experience serves to prove, and as Albarran showed, may be produced experimentally by the intravenous injection of staphylococci in rabbits whose kidneys have been injured. The movable kidney may escape structural or physiological alterations but in most instances the abnormally movable organ gives rise to upper urinary stasis and renal congestion, in which event the likelihood of bacterial implantation is increased. It is rare indeed to find an infected movable kidney in the absence of a history of pain indicative of attacks of ureteral occlusion. But to this rule also there are notable exceptions. Large hydronephroses may develop silently and remain quiescent until the onset of infection. In the extraordinary case described below, the freely mobile and greatly dilated kidney escaped infection during pregnancy, a difficult labor and the puerperium. In fact, there were no subjective symptoms or urinary abnormalities until an appendectomy was performed during the puerperium (see Fig. 6) and it is reasonable to suppose that the operation and anesthetic were concerned in the infection of the kidneys. This case further illustrates the remarkable ability of the kidney to handle infection when normal urinary drainage is reëstablished (by nephropexy in this instance) providing the induced structural changes in the pelvis and ureter have not become permanent ones.

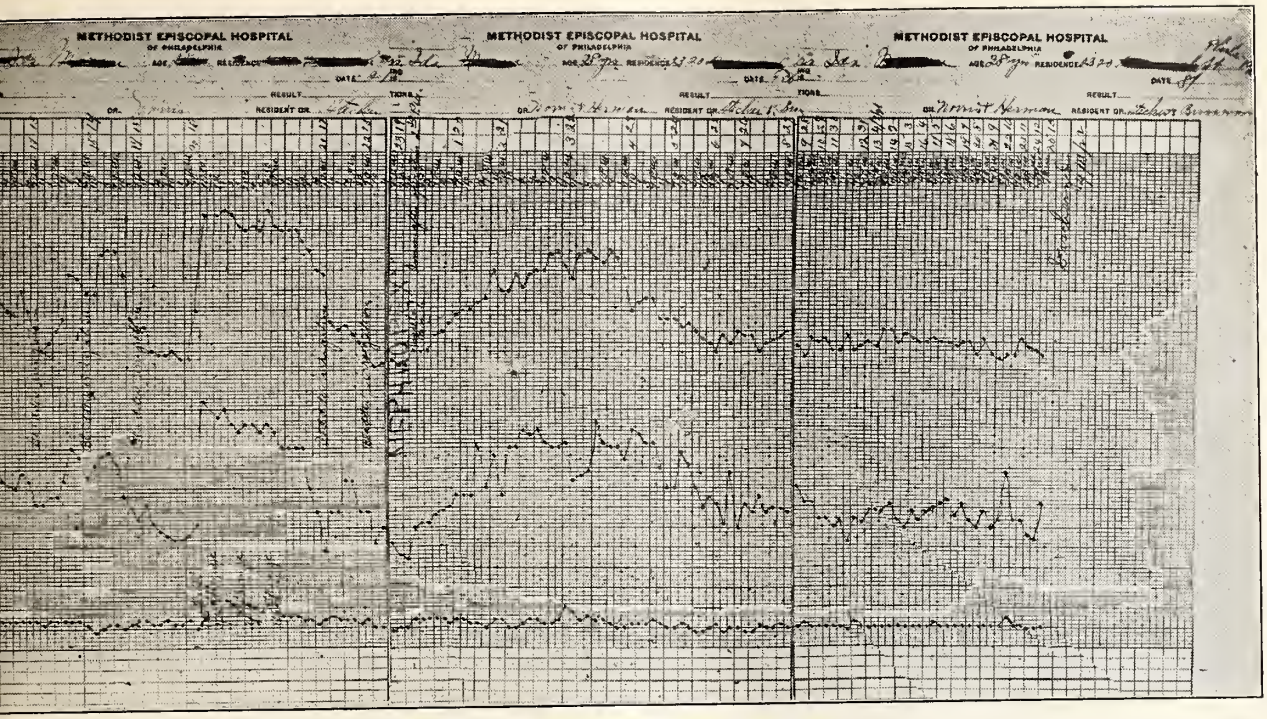
Congenital abnormalities of the kidney and ureter, including polycystic kidneys, hypoplasia of the kidneys and congenital deformities of the pelvis and ureters associated with otherwise normal kidneys are prone to infection, probably because of the imperfection in drainage to which they give rise.

Under the heading of local predisposing factors in renal infections must likewise be grouped the widely diversified causes of upper urinary stasis resident in the lower urinary tract, such as urethral stricture and prostatic hypertrophy.

Acute bilateral pyelonephritis; movable kidney (left) obstructing labor; rapid delivery; appendectomy; nephropexy.

I. M., aet. 28. Admitted to Methodist Hospital 2-11-21. Discharged 4-14-21. Services of Dr. Richard Norris and Dr. Herman. Patient was admitted to the obstetrical service of Dr. Norris one week overdue. Two weeks prior to admission she noticed a mass in the lower left abdomen which was thought to be the child's head. There was no history of previous urinary symptoms and the pregnancy was thought to be entirely normal. Examination revealed a mass in the lower left abdomen which on pelvic examination was thought to spring from the adnexa and to be large enough to interfere with delivery. The mass was movable, not tender, and there were no associated symptoms. The diagnosis of ovarian cyst was made. The fetal position was R. O. P. Rapid delivery, 2-12-21. Cord prolapsed. Baby living but partly asphixiated; died 4 days later. After delivery the tumor was more evident than before and was not only palpable but visible, especially when the patient was lying down.

On 2-24-21, the patient was etherized, whereupon the tumor disappeared. Dr. Norris was of the opinion that the cyst had ruptured and proceeded to explore



after the removal of the appendix and the decline in temperature after nephropexy. The infection disappeared without local treatment after suspension of the kidney.

the abdomen. The pelvic organs were found to be entirely normal and the only abnormality found was an extremely movable left kidney which could easily be brought down into the pelvis. The appendix was removed. Prior to operation the urine was entirely normal and there were no urinary symptoms.

Postoperative course: Four days after operation the patient was taken suddenly with severe pain in the left loin, chills and fever. (The temperature rose to 105.4° F.) The urinary output dropped to 14 ounces in 24 hours. Pyuria developed. Each four days thereafter she had a similar acute attack with the temperature rising to 106° F. She was then referred to the author for cystoscopic examination.

Cystoscopy: Bladder mucosa covered with mucopus. No ulceration and only slight cystitis. Right ureter patulous; hazy urine obtained in normal flow. Left ureter obstructed to all catheters 7 cm. from the normal position of the renal pelvis. Thick purulent urine obtained. Urine from right kidney—few pus cells, B. coli. Urine from left kidney—laden with pus, B. coli in pure culture.

P. S. P.: (1 c.c. intravenously). Appearance time: right kidney, 6 minutes; left kidney, 14 minutes. Total output (15 minutes period): right, 12%; left, 3%.

Blood culture negative. March 5, 1921, leucocytes 20,400. Total P. S. P., 3,-10-21, 43%.

Palliative treatment was advised. The patient was placed in the Trendelenburg posture and Dr. Norris attempted to replace the kidney which had become incarcerated behind the involuting uterus. This was unsuccessful. A second cystoscopy was done, with pelvic lavage, but the patient continued to have acute attacks, so that operation was advised.

Operation, 3-19-21 (Drs. Herman and Stuart). Left kidney exposed through oblique loin incision. Very movable kidney in low position found. Pelvis enlarged and flaccid. Parenchyma in fair condition, although somewhat thin. Nephropexy decided upon, although it was questionable if nephrectomy would not be the safer procedure. Kidney anchored (without decapsulation) to the twelfth rib and loin muscles with heavy silk sutures. Wound closed without drainage.

Postoperative. The temperature after a primary rise to 103, became normal three days after operation and remained so for seventeen days when she was discharged from the hospital. The urine rapidly became normal. With the exception of a stitch abscess from which streptococci were recovered, the convalescence was uneventful. The patient has gained thirty pounds in weight and is now (August, 1922) perfectly well.

REMOTE PREDISPOSING FACTORS IN RENAL INFECTIONS

Each one of the innumerable causes of bacillemia has a predisposing influence in renal infections, but in the light of our present knowledge, chief interest centers in the normal and abnormal habitats of the colon bacillus. Kretschmer attributes the preponderance of B. coli infections in the urinary tract in women to anatomico-physiological peculiarities of the intestinal tract, rather than to sex differences in the length of the urethra and other long accepted explanations. The work of Herrold, quoted above, is perhaps the first proof of the identity of B. coli recovered from the kidney and from the supposed primary focus of infection.

The literature contains no convincing proof that the removal of diseased tonsils or teeth has caused the spontaneous cure of pyelitis, and we have been unable to prove to our complete satisfaction in any case that the removal of such foci of infection was the major factor in the cure of a renal infection. Nevertheless, the work of

Rosenow and of Bumpus and Meissner indicates, if it does not prove conclusively, that infection from these sources may have a specific affinity for the renal tissues.

From a clinical standpoint, the important foci of infection in the male are, in their relative order of importance, as follows: The intestinal tract, especially the appendiceal and anal regions, the prostate gland and seminal vesicles, the skin, the teeth and tonsils and, finally, the gall-bladder. In the female, the intestinal tract and genitalia are the frequent sources of renal infection. In the following case the evidence is rather convincing that the source of the left sided pyelitis was an infected tube on the same side.

Pyelitis (left) complicating pelvic inflammatory disease: G. D., female, colored, age 27, admitted to Pennsylvania Hospital, 12-10-19, complaining of pain in the back. Present illness: Perfectly well until July, 1919, when she was confined to bed for several weeks with headaches, fever, loss of appetite and pain in the right loin. She recovered slowly and was getting along nicely until three months ago when she was taken with severe pain over the right kidney and later with hematuria. The bleeding stopped after a week but the pain continued and has been present ever since. The hematuria reappeared one week before admission and is still present. Past medical history was negative.

The physical examination was negative except for the following: Deep tenderness over the appendiceal region. Pelvic examination (Dr. Robert LeConte): chronic bilateral salpingitis and fixation of the uterus.

December 29, 1919, complained of burning on urination and terminal hematuria.

December 30, 1919, general physical examination (Dr. Norris) was negative. December 13, 1919, x-ray examination of urinary tract was negative (Dr. Bowen). January 8, 1920, Dr. Norris reported slight tenderness over left abdomen. Marked tenderness in left loin.

January 8, 1920, cystoscopy (Dr. Herman): Slight congestion in region of left ureteral orifice. Bladder otherwise normal. Cetheters passed to pelves. Cloudy urine from left kidney; clear urine containing few flocculi from right kidney.

P. S. P. (1 c.c. intravenously). Appearance time: right, 6 minutes; left, 16 minutes. Fifteen minute collection: right, 22%; left, 5%.

Patient apparently had infection of left kidney; right kidney functionally normal. January 13, 1920, patient complained of moderate pain in right wrist and ankle, which were swollen and tender. Less pus in urine. January 13, 1920, total P. S. P. 85 per cent for two hour period. Cultures from kidney (1) showed colon bacillus in pure culture.

An interesting feature of the case was the apparent transfer of pain from the diseased to the uninfected kidney.

Laboratory findings: right kidney, no casts, W. B. C. or R. B. C.; no albumin or sugar. Urine: left kidney was loaded with W. B. C. and R. B. C. January 15, 1920, differential P. S. P. Total function of left kidney for 30 minutes period, 11 per cent. January 25, 1920, pyelography: capacity of left pelvis, 15 c.c. The pelvis was duplicated. The minor calices were dilated and "feathered." February 7, 1920, pain in left loin had recurred. Patient seen in consultation; diagnosis of pelvic inflammatory disease, left sided pyelitis, and arthritis (gonococcal) made. Patient transferred to surgical service for operation.

February 18, 1920, bilateral salpingo-oöphorectomy and appendectomy (Dr. Mitchell). The immediate surgical convalescence was uneventful but the patient suffered from the arthritis. The urine became pus free without local treatment. Several months later she became irrational with hallucinations, etc., and was removed from the hospital.

April 20, 1920, cystoscopy (Dr. Herman). Clear urine obtained from both kidneys. The function was equal and normal, the two kidneys doing equal work.

Note: This patient had left sided pyelitis which has cleared up since the removal of the diseased tubes and ovaries.

Nonvenereal infection of the male genitalia associated with pyelitis is usually secondary to the latter, while pyelitis in association with chronic prostatitis and seminal vesiculitis is almost always dependent upon the latter. A considerable proportion of these cases prove to be tuberculous, but in the absence of this, the pyelitis is extremely difficult to cure and any improvement noted is transitory unless the genital infection shows marked improvement with treatment.

THE DIAGNOSIS OF SIMPLE PYELITIS

Kidney infections are rarely overlooked by those who consider persistent pyuria, however slight, as an indication for cystoscopy. Nevertheless, many patients are subjected to needless abdominal operations for the relief of symptoms arising from an infected kidney. We examined a patient recently with a large hydronephrosis who had had an appendectomy and an upper abdominal exploration without relief of symptoms which were undoubtedly of renal origin. Throughout the course of the patient's illness there was a slight pyuria, the presence of which was disregarded. It is important to remember that the intensely inflamed pelvic mucosa may be associated with only a slight amount of pus in the urine, and yet give rise to more marked symptoms than pyelitis associated with pus-laden urine. The real difficulty lies, however, in differentiating simple pyelitis from pyelitis associated with lesions which may antedate, or arise subsequent to, and be dependent upon the renal infection. Or the pyelitis may prove to be secondary to, and be of minor importance in relation to a primary lesion in the renal parenchyma or elsewhere. When the major pathology is cortical, the pyelitis is usually relatively insignificant, and similarly, in mechanical defects of urinary drainage, the pelvic infection is usually incidental and often disappears quickly when the fault is corrected.

The majority of cases of uncomplicated

chronic pyelitis are bilateral. Unilateral pyelitis in the absence of an antecedent history of acute onset is rarely uncomplicated, but having demonstrated the presence of pus in urine taken directly from the pelvis, the diagnostic problems become in large part the correct interpretation of data obtained cystoscopically.

Having determined the presence of pus in the kidney, it is important to measure the pelvic capacity. If a unilateral infected and dilated pelvis is found in the absence of an obstructive cause, differentiation must be made between simple pyelitis with atonic dilatation of the pelvis, congenital pelvic dilatation with infection, infected acquired hydronephrosis, and pelvic enlargement due to rare causes such as polycystic kidney with infection. Such differentiation can usually be made by means of differential functional studies (phthalein), since atonic dilatation due to the infection of an otherwise normal pelvis is rarely associated with marked degrees of functional depression. In bilateral cases, study of the blood chemistry yields valuable information regarding the degree of functional alteration.

Interstitial pyelitis, which causes contraction of the pelvic walls and consequent diminution in pelvic capacity, is incurable by conservative measures, although much benefit may be derived from pelvic lavage, especially in bilateral cases.

The diagnosis of simple pyelitis may be made correctly in the majority of instances when the following conditions are fulfilled:

(1) The demonstration of pus in urine obtained by catheter from the renal pelvis.

(2) The demonstration by smears or by culture of bacteria in urine thus obtained.

(3) Proof by the study of smears and by guinea pig inoculations of the absence of the tubercle bacillus.

(4) The failure to find complicating lesions elsewhere in the body (pulmonary, lymphatic or bone tuberculosis, lesions of the intestinal tract, etc.).

(5) Negative x-ray findings of chest and urinary organs.

(6) An approximately normal function of the infected kidney.

(7) Only moderate dilatation of the renal pelvis.

(8) The absence of a complicating lesion (mechanical or infectious) of the lower urinary tract and sexual organs (male).

All of the above conditions were fulfilled in the following case until a second x-ray examination yielded the following information: "There is a calcareous mass, probably gall-bladder, or located in the region of the gall-bladder. The pyelogram (Fig. No. 7) shows a filling defect of the true pelvis at the site of the calcareous area, and on these data the diagnosis was made."

Tuberculosis of the kidney confined largely to the pelvis; calcification of the tuberculous area: S. H., female, age 17. Admitted to Methodist Hospital 4-25-21. Discharged 5-23-21. Chief complaint: frequent and painful urination.

History of present illness: In September, 1920, began to have frequency of urination and some burning. The symptoms had grown progressively worse and at this time, had nocturia 7 or 8 times. No hematuria. No general symptoms. Family history negative.

Physical examination negative, except for slight tenderness in right loin. Urine contained moderate amount of pus. Culture showed colon bacillus in pure culture. No. TB. found in many specimens examined prior to making a pyelogram, after which they were found in the smears.



Fig. No. 7

Pyelogram of case of tubereulosis of the renal pelvis. Note the filling defect of the true pelvis. An area of calcification was seen in the x-ray plate taken prior to the pyelogram. This was situated at the site of filling defect. The parenchyma was slightly involved.

Laboratory findings: 4-25-21, P. S. P., 1st hour, 25 per cent; 2d hour, 7 1-2 per cent. Blood urea, 12 mgms. Wassermann negative. May 2, 1921, P. S. P., total for two hours, 25 per cent. Hb., 70 per cent; R. B. C., 4,400,000; W. B. C., 6,000. Blood sugar, 0.129.

X-ray report, 4-25-21: Calcareous areas over region of pelvis of right kidney. This is probably gall-bladder (Dr. Percival). Differential kidney studies showed diminution in function of the right kidney with normal left kidney. Pus and colon bacilli were obtained from the right kidney; normal urine from the left kidney. Tubercle bacilli were not obtained until after pyelogram, when they were recovered from the right kidney.

Pyelography: There is a filling defect in the region of the pelvis of the right kidney (see Fig. No. 7)

corresponding to the location of the area of calcification shown in the previous x-ray studies. May 4, 1921, right lumbar nephrectomy (Drs. Herman and Stuart). Pathological report (Dr. Richardson): Area of calcification in the pelvis of the kidney, the pelvis being somewhat enlarged. The cortex contains several small abscesses. Microscopically, these areas are typical of tuberculosis. The pelvic tuberculosis has undergone calcification. Postoperative course uncomplicated.

In the event of failure to find characteristic changes of tuberculosis in the bladder surrounding the ureteral orifices, or tubercle bacilli in the urine, the very early or the very chronic cases of tuberculosis may escape recognition, but in all except the most exceptional cases, the disease causes considerable destruction of renal function. In other instances, the failure of a renal infection to respond to local treatment may suggest its tuberculous nature and lead to pyelographic studies, when changes characteristic of ulcerative papillitis will usually be demonstrable.

The most important complicating factor in renal infections is stone. The differential diagnosis between pyelitis with and without stones in patients with characeristic clinical symptoms but with negative x-ray findings, is fraught with the greatest difficulty. We have succeeded in demonstrating the presence of stones negative to the x-ray by preliminary injection of the kidney with sodium iodide solution (15%). If the stone is small, soft and porous, the probabilities are that it will absorb enough of the iodide solution to cast a shadow. The method has been successful in our hands in four cases; we are unable to comment on the percentage of successes and failures with this procedure.

Stricture of the ureter is a rare complication of pyelitis in the male and also, in our experience, in the female. Strictures of the ureter which do not cause ureteral dilatation could scarcely contribute to the persistence of a pelvic infection. Ureteral dilatation (excluding those cases due to atony from nerve lesions, congenital dilatation, dilatation due to descending ureteritis, extra-ureteral pressure, etc.) is usually dependent upon strictures, or calculi located at or near the bladder. In these cases the upper urinary infection cannot be controlled until the ureteral obstruction is removed.

In a certain proportion of cases a primary pyelitis gives rise to intense cystitis, and our first efforts must be directed against the bladder infection, on account of the difficulty of instrumentation. Many years ago Cabot recommended suprapubic drainage in the treatment of severe chronic bilateral pyelitis, and this method is applicable in cases complicated by severe cystitis, especially of the encrusted variety. Several years ago we examined a man, aged 64, who had at that time a bilateral colon bacillus infection complicated by cystitis of moderate degree. Local treatment was advised but not carried out. One year later he reappeared with an extensive encrusted cystitis which precluded instrumentation and it was necessary to drain the bladder before local treatment of the kidneys could be undertaken. The final result was satisfactory in this and other cases in which a small inflamed and intolerant bladder prevented lavage of the kidneys as the primary measure in the treatment.

The secondarily infected polycystic kidney presents an interesting problem and the correct cilinical diagnosis is seldom made in the absence of bilateral palpable enlargement of the kidneys. This abnormality is invariable bilateral but only one organ may have become palpably enlarged when an intercurrent pyelitis brings the patient to the surgeon. Both kidneys may be considerably enlarged but not palpably so. Examples of each of these clinical types have been admitted to the Pennsylvania Hospital during the past three years. The first case, a woman of middle age, was admitted to Dr. Stengel's service with abdominal swelling and irritability of the bladder. Dr. Stengel's clinical diagnosis of infected polycystic kidneys was confirmed by cystoscopic studies, pyelograms, and postmortem examination. (Fig. No. 8.) The second patient came to the surgical service of Dr. Robert LeConte complaining of pain in the left loin. The diagnosis on admission was renal calculus. Differential phthalein studies showed dimunition in function of both kidneys, in probable explanation of which there was bilateral colon bacillus infection. Pyelography was undertaken without any suspicion of the presence of polycystic kidneys and we were surprised to find pelvic changes characteristic of this condition, together with enormous enlargement of the outlines of the kidneys, notwithstanding that the organs were not palpable. The difficulties of eradicating infection in cases of this kind would seem to be insurmountable, although in the third case the infection disappeared. The latter case was seen in consultation with Dr. Carnochan, of Princeton, N. J., in April 1922. One week prior to this the patient had been taken suddenly with a typical attack of acute pyelitis. At the time of our first examination the patient was found to have pyuria, a temperature of 107° F., and a large tender mass in the upper right abdomen. A tentative diagnosis of infected movable kidney was made. The complete record of the case is as follows:

Bilateral acute pyelonephritis; congenital polycystic kidneys: A. B., aet. 38, male. Seen with Dr.

Carnochan, Princeton, N. J., 6-1-22. Duration of illness one week. Began with chill, high temperature, sweating, pain in the right loin and frequency of urination.

At time of first examination temperature was 107° F. A tender mass was palpable in the right loin space. A tentative diagnosis of infected movable kidney was made. Patient referred to the Pennsylvania Hospital, Philadelphia. Admitted to hospital 6-3-22; discharged 7-6-22.

Examination on admission: Abdomen negative except for presence in the right loin of a slightly tender mass, the size of a small grapefruit. This moved with respiration. Mass had the general outline of a large kidney in a low position. Genitalia negative.

Cystoscopy 6-6-22: Local anesthesia. Bladder urine contained flakes of mucopus. Very slight cystitis. Bladder tolerant. Both ureteral orifices slightly congested. Ureteral catheters (size No. 6 F.) passed to pelvis of each kidney. No apparent shortening on right side. Normal intermittent flow of urine without evidence of pelvic dilatation. Specimens of urine from each kidney to laboratory. Urine from both kidneys cloudy. Appearance time of phthalein (intravenous injection), R. 5 minutes; L. 5 minutes.

Cystoscopy 6-8-22; Phthalein appearance time, r. 5 minutes; l. 7 minutes.

Differential kidney study: Percentage output, 15 minute collection, r. 10 per cent; l. 45 per cent.

Note: All evidence points to bilateral infection of the kidneys with considerable destruction of function on the right side.

Pyelography. (R) The outline of the true pelvis is narrowed with elongation of the lower major calyx. Dr. Bowen reported as follows: "There is some pathological change profoundly changing the contour of the lower boundary of the pelvis of the right kidney and of the lower calyx. It would appear to be the encroachment of a smoothly spherical tumor."

Under the fluoroscope, with the pelvis injected, the latter seemed to be separate from the tumor, which could be moved apparently without moving the pelvis shadow. From this evidence, and before a careful study of the dried pyelographic plate was made, the tumor was considered to be extrarenal or springing from the renal capsule at the lower pole. Chest examination June 18, 1922, by Dr. Newlin, negative.

Laboratory examinations: Leucocytes (June 8, 1922), 26,200; June 14, 1922, 21,000.

Blood chemistry: Urea nitrogen 29 mgm. Nonprot. nitrogen 54.2. Sugar 0.99. Total phthalein (June 4, 1922) 50%.

Urine from right kidney: Ft. Tr. albumin. Many pus cells. Few hyaline casts. Bacillus coli. Urine from left kidney: Numerous pus cells. Few hyaline casts. Bacillus coli.

Operation June 20, 1922: Exposure of the right kidney, which was found to be polycystic, with extensive perirenal adhesions. Cultures from cyst contents showed B. coli and streptococci. Closed without drainage. The postoperative course was uneventful. The fever subsided, the urine gradually became pus free and the patient was discharged July 6, 1922, in very good condition, and has since remained well.

THE PROGNOSIS OF SIMPLE PYELITIS

The following quotation is taken from Guiteras' modern textbook of urology: "So far, covering a period of nine years that cases of pyelitis have been treated by lavage of the renal pelvis, there is not a history of a single case that has been cured by this method." Contrast this with the results obtained by Kretschmer in a series of 200 cases, 66.4 per cent of which were cured by local treatment. Kretschmer claims that 48.2 per cent of the cases treated by pelvic lavage were cured by a single injection of 2 per cent silver nitrate. The majority of observers would, I believe, take a more conservative view than Kretschmer's results would seem to justify. Simple uncomplicated pyelitis responds to pelvic lavage with surprising rapidity and the infection is actually destroyed in a far greater proportion of cases than in those treated medically. Acute pyelitis will subside with medical treatment alone in most instances, but the infection frequently



Fig. No. 8
Pyelogram of infected polycystic kidney.

remains in a quiescent form. The majority of cases of pyelitis of pregnancy are cured clinically by expectant treatment but a slight pyuria persists and in a definite proportion of these cases the infection proceeds insidiously, often with an occasional acute exacerbation, to the development of surgical kidney.

In our experience, the complicated cases of pyelitis outnumber the simple cases, and we find it impossible to obtain as large a percentage of cures as claimed by others. The results of pelvic lavage in uncomplicated pyelitis are brilliant, but recurrences are not uncommon, especially in colon bacillus infections.

Fig. No. 9 shows the pyelographic outline of the right renal pelvis with uncomplicated colon bacillus pyelitis, which responded promptly to instillations of 2 per cent silver nitrate solution.

After three treatments, the clinical cure was absolute and the urine was pus free and sterile on several occasions, and remained so for some time but there have since been recurrent attacks of



FIG. No. 9
Pyelogram of infected kidney.

symptomless bacilluria. All of the bacilli are secreted by the right kidney. This patient had an appendiceal abscess some years ago which was drained without removal of the appendix, which may or may not have had some relationship to the pyelitis.

Pyelitis due to chronic intestinal lesions is usually persistent unless the intestinal infection can be removed or brought under control.

Infections of the congenitally abnormal renal pelvis are difficult to cure, the difficulties in these, as in other cases of pyelitis, being in direct ratio to the degree of parenchymal involvement as measured by functional tests.

Simple pyelitis caused by organisms other than the colon bacillus are especially rebellious to treatment in most instances. The large proportion of upper urinary infections which cannot be cured permanently can, at least, be kept under control by proper hygienic, medicinal and local treatment.

TREATMENT

The treatment of complicated pyelitis will not be dealt with here; our remarks apply only to simple cases. Each patient with pyelitis should have a most painstaking general physical examination, not only in the search for focal infections, but as the means of ascertaining the patient's general resistive powers and the presence of complicating diseases that would tend to favor the persistence of any infection.

Demonstrable foci of infection should be removed but we have seen little or no benefit follow the removal of diseased teeth and tonsils in adults with colon bacillus pyelitis.

In cases of pyelitis complicating inflammatory disease of the pelvic organs in women, we advise removal or treatment of the diseased tubes and ovaries as the primary step in the treatment. We have seen cases of this kind, which after failing to respond to local treatment of the infected kidney, clear up in some instances without local treament postoperatively after removal of infected tubes.

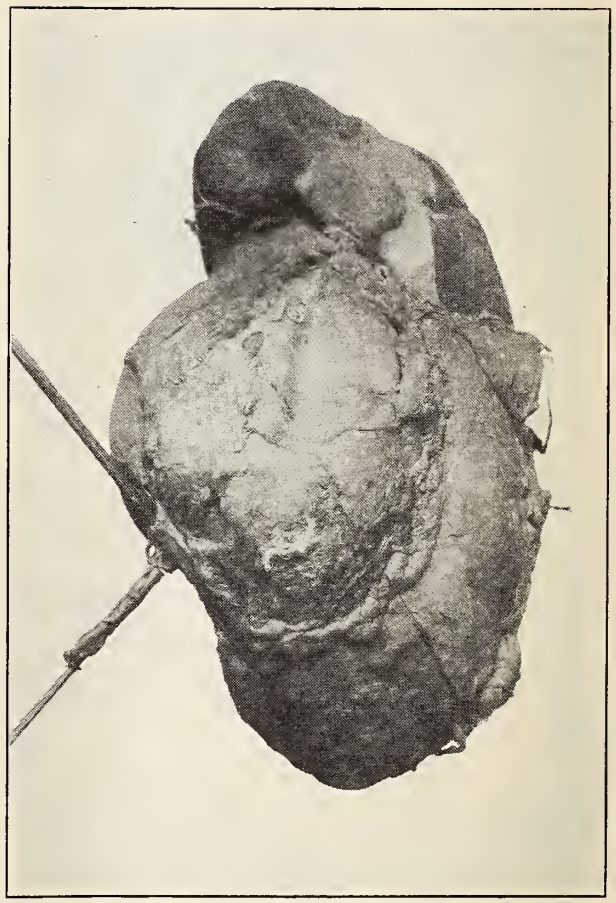


FIG. No. 10

Hydronephrosis caused by aberrant vein crossing the ureter at the uretero-pelvic junction. Note how the abnormal blood vessel encircles the pelvis. The ureter was partially strictured at the point of crossing. The preoperative diagnosis (made by pyelography) was infected hydronephrosis due to congenital stricture of the upper ureter.

Complicating intestinal lesions which cannot be controlled by medicinal treatment such as colonic irrigations, etc., render the prognosis of pyelitis extremely poor as far as complete cure

is concerned, but lavage serves to control the infection.

The administration of the Bulgarian bacillus and bacillus acidophilus in colon pyelitis has been of no benefit in our experience.

Autogenous colon bacillus vaccines are of value occasionally, but they fail more often than they succeed in influencing inflammation of the kidney pelvis, even in the simple cases in which they might be expected to do the most good. Vaccines should never be used until complicating lesions have been excluded, and then only as an adjunct to local treatment. Our best success with vaccine therapy in renal infections has been in the treatment of pyelitis in children.

Some authorities advocate the primary administration of alkalies followed by acidification of the urine. In acute cases, including the acute pyelitis of pregnancy, which should be treated medically at the outset, the alkalies are extremely useful. We prefer alternate doses of sodium bicarbonate and potassium citrate until the urine becomes strongly alkaline, when the dose is reduced to the point where the urine is kept moderately but persistently alkaline in reaction.

Acute pyelitis responds satisfactorily to pelvic drainage, but lavage must be done with great caution if at all, lest overdistention add to the inflammation. In severe cases characterized by high temperatures, chills, marked leucocytosis, etc., it is advisable merely to place a catheter in the pelvis. The instrument may be kept in place for several days or more, and as conditions warrant it, instillations may be made. Pyelography should never be performed in the acute stages of pyelitis.

In the majority of chronic cases, small doses of urotropin (gr. 3, t. i. d.), with large doses of acid sodium phosphate (gr. 15, t. i. d.) are distinctly beneficial, but are merely adjuncts to local treatment.

In the exceptional case, lavage may be followed by severe systemic reactions and must be discontinued. In the very rarest instances a cortical infection becomes activated, with the eventual development of a surgical kidney.

Our preference in the treatment of chronic pyelitis is for the alternate weekly or bi-weekly instillation of ½ to 2 per cent of silver nitrate solution and 1 per cent solution mercurochrome. Silver solutions of this strength cause superficial erosions of the pelvic mucosa, and probably also of the tubular epithelium, but no serious harm results from the use of solutions up to two per cent strength. We would hesitate, however, to follow Geraghty's suggestion and use five per cent solutions.

Some of the most brilliant results in urological practice are attained by pelvic lavage in the treatment of pyelitis, and likewise some of the most dismal failures. The latter are often found, on further examination, to depend upon factors that should have served to contraindicate local treatment from the beginning. No form of treatment should be undertaken in chronic cases until all diagnostic measures have been exhausted, and the considerable effort involved will be well repaid by more uniformly good results.

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DISCUSSION

Dr. Thomas C. Stellwagen (Philadelphia, Pa.): Dr. Herman's paper has proved to be extremely interesting. The whole problem of kidney infection is at the present time obscure. It is my opinion that most kidney infections are due to the colon bacillus, and have their origin in a similar condition which has occurred in early childhood. Colon bacillurias are fairly common in young children and are attended by a course of temperature, which may often simulate some peculiar type of fever, as typhoid or malaria, so closely as to be confusing. Under treatment a clinical cure is rapidly effected. Rest in bed, with the conventional urinary antiseptics, are administered. It is likely that the latter function more actively in appeasing the mind than in the arresting of the inflammatory process. The child is considered cured and goes on to adult age, when marriage becomes the natural course. Then, in the case of the female, and during the first few months of married life, kidney infection may again become manifest. The individual presents a pyelitis, and a pyelitis which is of colon bacillus origin. What could be more reasonable than to assume a relighting of an old and quiescent infection? Drainage and lavage are sufficient to effect a symptomatic cure in many of these cases; but unfortunately a bactriological cure—an eradication of the infection—is a much more grave and uncertain problem. The best results seem to be secured with lavage accompanied by the use of vaccines. Most authorities speak of three degrees of infection—the mild, the medium and the severe.

The essayist has shown an apparent connection between pyelitis and deformities of the kidney pelvis; and holds that such abnormalities are a likely etiologic factor, because of improper drainage produced. I am of the opinion that his inference is correct; and also that such conditions warrant surgical intervention, provided too great operative risk is not entailed. However, conservative plastic surgery upon the kidney pelvis is not to be undertaken so lightly as some statisticians would seem to have us believe. The term statistician is used advisedly, since numerous reports are statistically perfect yet surgically unsound.

The exact status of the pyelogram and its position as a diagnostic entity is one that must be carefully considered. It is by no means always reliable, and we must consider many problems of interpretation. It has been my experience that wide variations in the pyelogram may and do appear, at different times in the

same individual. Various reasons may be assigned as a cause, such as: pressure of the radiopaque solution, position of the patient, or variations in the bowel content. But be it from whatever cause the fact remains that it does occur; and the surgeon must ever have this fact in mind. Diagnosis of what the kidney pelvis contains is bound to be fraught with uncertainty. I have found conditions within the kidney pelvis at times quite different from those which I had expected to find after study of the pyelogram. It is imperative that the pyelographic and cystoscopic studies be made by a competent team, consisting of a urologist and a radiologist.

It has been our practice for some time in the Jefferson clinic to pyelograph but one kidney at a time. We have had a death apparently from acute suppression, due as we believed, to the injection of both pelves at the same time. It must obviously be bad surgical practice to distend both kidneys, especially when one or both are diseased.

There is one point upon which I take issue with Dr. Herman, and that is the practice of stitching the kidney in place. Practically all of the nephropexy operations that rely upon decapsulation of the kidney, with subsequent fixation to the twelfth rib or other structures, must of necessity put a half turn in the pedicle or place the organ in a tilted position. I prefer DaCosta's modification of the elder Simms' technique, which truly places the kidney well up in its normal position. There are, to be sure, some admitted objections to this operation; but these are more than counterbalanced by the results obtained. We have all seen not only recurrence of the condition, but actual dislocation of the kidney, follow the stitching operation.

It is unquestionably true that in the past, many kidneys have been sacrificed which could have been saved. I am distinctly in favor of conservative kidney surgery. It is remarkable how small a portion of kidney structure will function to support life. A case of Dr. Gibbon's comes very vividly to mind, in this connection. A doctor who had previously undergone nephrectomy for tuberculous kidney required a second operation upon the remaining organ. Two large tuberculous abscesses were incised, carbolized and drained. Yet this patient recovered, did well, and lived for some years in comparative comfort. However, let us not overlook the importance of favorable climatic conditions in the treatment of genito-urinary tuberculosis. Certainly such an environment as our own is not satisfactory for these cases.

In all kidney infections it is imperative that the surgeon or investigator be not blinded because a predominating colon bacilluria is found. This condition may only mask tuberculous infection. It is my practice to consider all such conditions as potential tuberculosis, and to regard them with suspicion.

Dr. John B. Lownes (Philadelphia, Pa.): I think Dr. Herman is particularly interested in the pathogenesis of kidney infection, and I am sure we all are, since we now know it to be of frequent occurrence.

The majority of the cases of pyelitis and pyelonephritis present rather definite predisposing causes, whether they be of the ascending or descending type. Back pressure, due to obstruction of some part of the urinary tract is the cause of the kidney becoming infected sooner or later. Focal infection elsewhere in the body, frequently will attack the kidney. Should both of the predisposing causes just mentioned be present, renal infection is assured.

Not infrequently, however, a case presents itself in which the etiology cannot be determined, even after the most exhaustive study. It may be that the cause was transitory, and no longer exists at the time the case is studied. The fact remains that some few are unaccounted for; fortunately, however, a rather small percentage, thanks to the almost perfected present-day methods of renal study.

Dr. Alfred C. Wood (Philadelphia, Pa.): You are all familiar with the experiments showing that you can put bacteria into the urinary bladder or into the gallbladder and yet if there is perfectly free drainage, no infection results; but if free drainage is obstructed, and there is some back pressure, almost invariably infection results. The reason that good results have followed when an infected kidney has been hitched up to the twelfth rib may be because by straightening out a little obstruction in the ureter and giving good drainage the infection is overcome, and so when you irrigate certain cases of pyelitis a few times and have a cure, it may have been that passing the catheter has relieved some obstruction which had kept up some back pressure and thus prolonged the infection.

Dr. Herman (in closing): In conclusion I want to call to your attention the probable influence that bacterial toxemia plays in causing a condition of the kidney predisposing to the implantation of bacteria. It is altogether likely that the toxic influence antedates the bacterial implantation in most instances, and it is reasonable to believe that in the absence of this effect the bacteria would pass through the kidneys in many instances without setting up an inflammatory process. Clinical illustrations of this sequence of events are quoted from the writings of Kowitz, and we have described in detail a case of osteomyelitis and renal infection which illustrates the same thing.

COMPLETE TONSILLECTOMY*†

REID NEBINGER, M.D.
DANVILLE, PA.

Tonsillectomy has become such a common procedure that I hesitate to offer it as a subject for consideration before this section. However, it seems to me too often we fail to do a complete operation and we are still leaving too many remnants. Several statistical papers published within the year covering thousands of cases with high percentages of reoperations have further convinced me that we are failing at some point.

I want to say at the outset, that I have no intention of advocating any method as perfect, nor do I mean to enter into controversy as to the choice of anesthetic to be used. Those are matters to be left to the individual operator.

I have always been much interested in the examination of cases in which some form of tonsil operation had been done. In the routine work at the Geisinger Memorial Hospital, there is an opportunity of inspecting all patients before their discharge and at subsequent intervals until healing is complete. The results are not

* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

† From the Department of Eye, Ear, Nose and Throat, The George F. Geisinger Memorial Hospital, Danville, Pa.

always what I should like to see. There has also been an opportunity to examine no inconsiderable number of patients who had been operated elsewhere but who were still complaining of trouble referable to the throat. The majority of these cases fully believed that a complete tonsillectomy had been done and were assured that this was the fact. Some interesting points have come up in the course of these examinations and I have decided to bring these before you. Similar experiences on your part, if any, may bring forth discussion that will prove of benefit to all of us.

It is the pride of every operator to be able to offer for inspection the clean, symptomless throats of his patients and as they go elsewhere to feel that they will pass the acid test of rigid examination by a possibly none too friendly contemporary. The after appearance of the throat is the criterion by which our work is judged, regardless of whether the original symptoms have disappeared or not. In my opinion, this is entirely proper, for the following reasons: We may have operated upon a certain case for purely local symptoms. A later inspection may show that considerable tissue has been left in the throat. The patient may be free from trouble, at least temporarily, but this should be considered a poor operative result. A second case, showing general symptoms for which the tonsils are responsible, may have no trouble locally, yet the tonsils are focal points. In either case an incomplete operation is almost certain to be followed by poor results.

We are all acquainted with the appearance of a throat which has had a tonsillotomy. This operation is done as a partial removal only and one expects to see varying amounts of tonsil tissue remaining. The results are so consistently unsatisfactory that tonsillectomy, at first timidly advised, is now definitely advocated as the operation of choice. Going over the histories of these cases the fact can be brought out, with few exceptions, that they have had more trouble following the tonsillotomy than before. For this reason the operation has been practically abandoned.

The next group of cases is that represented by partial tonsillectomy. Note that I do not classify these as tonsillotomies, since the obvious intention was complete removal. This was so reported to the patient's family in most instances. Certainly, no condemnation can be too severe as applied to this type of incomplete operation. In the tonsillotomy one expects to find considerable tonsillar tissue remaining; on the other hand, the partial tonsillectomy gives the patient a feeling of what is certainly a false security and the return of symptoms causes him to doubt the efficacy of tonsillectomy. This reflects discredit upon the specialist. When this type of case falls into the hands of a friendly coworker, the patient is told that his tonsils have "grown in again." In these days of more exact medicine and general enlightenment along scientific lines, the more intelligent class of parents can no longer be satisfied by this obsolete excuse for poor tonsil surgery. Operators in this class either have had insufficient or no technical training or they are not fully impressed with the importance of the work at hand. Too often it is the general surgeon who errs in this way, although there are many who do a clean operation.

There is a rather rare experience which might at times be responsible for poor end results when one must complete the operation quickly; for example, hemorrhage, and the poor condition of a patient. One is not entirely satisfied under such conditions, but must hope for the best under unfavorable circumstances.

The third and last group and to me the most interesting of all, for the reason that it really furnishes the subject for this paper, comprises cases of complete tonsillectomy, operated upon in most instances by men of established reputation. In my earlier experience there were numerous cases in which the postoperative examination did not come up to my expectations. At the final inspection of the throat about two weeks after operation there is occasionally found, upon forcibly depressing the tongue, a well-marked nodule of what is apparently tonsillar tissue. This is either continuous with the side of the tongue or in the sulcus just external to it. In a great many cases this nodule takes on all of the functions of the tonsil, especially as it relates to disease, with the possible exception of peritonsillar abscess. In spite of this condition of affairs, there is no doubt in my mind, that the complete removal of the tonsil with its capsule, is accomplished by the type of operation then and still in use. Further emphasizing this point, there come to my notice, from time to time, patients of other operators showing the same condition. When this state of affairs was once recognized, a careful inspection of every case was made while the patient was still upon the operating table. Care was taken to inspect the region of the tongue and the base of the tonsil. In this way, in a great many cases, there was seen a variable-sized piece of tissue attached to the side of the tongue. This remained after the snare had been used to separate the base. As a matter of fact it is often impossible to include this nodule in the first sweep of the snare. It has, therefore, been my practice for some time to use the snare a second or third time, especially in adults. I no longer

have to be apprehensive of this apparent regrowth of the tonsil, which I believe is none other than hypertrophied plica.

The appearance and size of this nodule seems to depend upon the individual to a great extent. In some it attains the size of a half tonsil in a very few days after operation, while in others it is scarcely noticeable. We sometimes see a counterpart of this phenomenon in the appearance of strips of lymphoid tissue *behind* the posterior pillars and hypertrophy of the mucous follicles of the pharyngeal wall appearing after tonsillectomy. In not a few cases these hypertrophies are present before operation. I formerly removed them when excessive, but the added trauma and later contraction of the throat caused me to abandon this practice. It may be an effort on the part of nature to reinforce or replace the normal tonsil barrier and it must be borne in mind that if not removed, these patients may continue to complain of recurrent sore throat.

At the Mayo Clinic, a great deal of stress is laid upon a thorough and complete removal of all of the plica, and for the lymphoid hypertrophy in the pharynx, radium is advocated.

In an excellent statistical paper by Coakley and Pratt[1] they found that in their series of nine hundred and twenty-six cases, one hundred and forty-five, or twenty-one per cent, were secondary operations. It is significant that such a large number of private patients required reoperation. This indicates that extreme care must be exercised in every case to prevent the necessity of repeated exposure to the dangers incident to operative procedure.

Frequently there is free and persistent bleeding following the removal of tissue so near the tongue. This often necessitates the use of sutures for control. Add to this the difficulty of working deep in the throats of certain patients, and the frequency with which this apparently insignificant mass is overlooked is accounted for. Our artist has made a drawing of this nodule which is not diagrammatic but from actual observation at the operating table. It is shown grasped by the Allis forceps and put on the stretch, ready to have the snare applied. This is a point I would especially stress: the nodule must be looked for very carefully, as it blends itself readily with the side of the tongue and bottom of the fossa. Before the nodule is grasped, the bottom of the tonsillar fossa will be seen apparently smooth.

Bacteriologically, these hypertrophied nodules or stumps are subject to invasion by the same flora that inhabit the tonsils. This fact has been proved by the studies carried on by Keilty[2] in the laboratories of the Geisinger Memorial Hospital in a series of three hundred cases, which included about twenty-five secondary operations. Like the tonsils, these nodules were placed in sterile gauze as soon as removed and sent to the laboratory, where, after searing the entire surface with a red-hot spatula, cultures were made from the deeper portions of the tissue. He found practically the same types of organisms as are demonstrated in the tonsils removed at primary operation.

CONCLUSIONS

1. We are leaving entirely too many remnants in the throat after tonsil operations.
2. Tonsillotomy fails in most cases, because the source of infection is not entirely removed.
3. Partial tonsillectomy fails for the same reason and also discredits the specialist.
4. Attention is especially called to a nodular remnant which may remain at the side of the tongue following an apparently complete tonsillectomy.
5. This nodule must be eradicated if a perfectly clean after result is to be obtained.
6. Lymphoid tissue behind the posterior pillars should not be traumatized at the time of operation but may be treated at a later date if tonsillectomy does not clear it up.

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DISCUSSION

DR. C. J. KISTLER (Lehighton, Pa.): I felt it a great compliment to be invited to open the discussion on so practical and timely a paper as Dr. Nebinger has just read to us. After reading the paper I found very little to discuss and can only make a very general approval of what he has said and, perhaps, emphasize or venture a very personal view on some of the points he brings out.

The advisability, if not the necessity of a complete removal of the tonsil when the operation is at all indicated, is hardly any longer within the field of argument or discussion, with our present knowledge of the pathology of the tonsil and its influence on the system when diseased. If any one attempting this work at all is not able to bring this about, he should leave nothing undone to reach a state of efficiency when only exceptional conditions prevent a complete operation. Those of us who have considerable to do with this operation know only too well that there are some exceptions—conditions beyond our control—and this fact alone, as Dr. Nebinger suggests, should make us very cautious in classifying a colleague, when we may chance on a patient who does not exhibit a "classical" result some months after operation. Personally, I feel like grasping my colleague's hand in sympathy, and I would dread to place myself in the hands of one who has arrived at the stage when he feels that he had no more to learn in this operation, for I would feel that either his experience was quite limited or he was decidedly

dishonest with me, as well as with himself. So much for the tonsil proper.

When it comes to removing tissue around or below the tonsil, I feel like stepping more gently and speaking very softly. For some years I have been watching this tissue of which Dr. Nebinger speaks, which seemed to come from nowhere after what I had considered a perfectly clean enucleation at the time of operation. On close inspection it seemed more often hypertrophy of what was the remains of tonsil tissue left on the inner side of a thickened plica, and low down. I invariably inspect carefully each fossa after all bleeding has been checked, and in spite of this, there will come this smaller or larger mass of tissue which shows what are, undoubtedly, follicles. This does not often happen, but because it does occur, I try to remove as much of the plica as I can; and where that has been done it is my experience that very seldom, indeed, does any recurrence of the tissue occur. All of us, no doubt, have many times noticed the mass of lymphoid tissue at the base of the tongue near the base of the tonsil and outside the plica. In my anxiety to leave an anatomically perfect result, I have yielded to temptation and removed this a number of times when it seemed rather prominent. Like Dr. Nebinger, some of the most troublesome bleeding from the plexus of the large veins in this region I have had to handle, has followed this, and after I had compressed and ligated I felt that perhaps I had exposed my patient to greater danger in the prolonged operation than the bit of tissue I got ever would have done, for it is my invariable custom not to send the patient from the table until there is absolutely no bleeding from the tonsil region. So my present feeling is to treat the base of the tongue in the region of the tonsil with the greatest respect, and until one has acquired considerable experience in handling ligatures in the lower and anterior tonsil region, rather to go very slowly with this tissue. I say this, although I ligate practically every case over six years of age, and often below. The usual result is that this tissue will atrophy after a complete tonsil operation, and if not it is more easily handled afterward with cocain and trichloracetic, just as will the mass of tissues behind the pillars, which Dr. Nebinger has also found it well to let alone at the time of operation on the tonsil. While this small mass may be subject to all the bacterial invasions of the larger tonsil mass, the same is true of all the tissue on the whole base of the tongue, as well as the pharynx, which, therefore, should also be removed, if that were a sufficient reason.

I would not for one moment wish to be understood that the removal of this tissue, of which Dr. Nebinger speaks, is uncalled for, or an unnecessary complication of the tonsil operation, or that it should not be attempted. With Dr. Nebinger's undoubted skill and experience, and the splendid facilities under which he works, it is no doubt perfectly justifiable; but with facilities, perhaps second to none, in the hospital where I operate, and after a considerable experience, I feel that a word of caution should be spoken to the unwary to acquire a big stick, and speak softly when entering this phase of tonsil surgery.

Dr. George R. S. Corson (Pottsville, Pa.): I believe I have had longer experience in tonsil work than most of the men present. I have gone through the various stages and have witnessed the various kinds of tonsil work from the days when we removed the tonsils by cautery until the present time. I myself was supposed to have had my tonsils removed by cautery and have had to have them removed again during the past year. Twenty years ago I strongly advocated the complete removal of the tonsil. I was criticized by a very eminent man for this teaching, but I have been teaching it for the last 20 years. I claim that the small piece of tonsil that remains after a part of the tonsil is removed is covered with cicatricial tissue and cannot, therefore, drain and is a source of more trouble usually than the original tonsil. And I have stuck to it until this time. You can realize what satisfaction it gives me after all these years to see you men come around to my way of thinking.

As to the tissue remaining in the lower part of the fossa, I am not so particular about removing all of that lymphoid tissue in this area. It is a question in my mind whether it is tonsil tissue or not. For the last two or three years I have been using the light known as the Cameron dental lamp. With this lamp the tonsils are easily seen and removed, and if there is a pretty deep fossa present I take the light and run it around inside the tonsil fossa and by transillumination locate any little particle of tissue that remains. As mentioned by the essayist, I have all patients report two weeks later to see if there is any particle of tonsil or organized clot of blood which should be removed.

Dr. Fielding O. Lewis (Philadelphia, Pa.): I have long since learned not to criticize another surgeon's tonsil operation. It is impossible to know what condition existed at the time the tonsils were removed. No matter how complete the operation may be for the removal of lymphoid tissue in the tonsillar fossa, doubtless most of us have had cases in which there were some that had not been removed or that showed evidence of recurrence. I feel we should be very charitable in our criticism of another's work.

Dr. George M. Coates (Philadelphia, Pa.): A good many cases similar to those reported by Dr. Nebinger are caused by extensions upward of the infratonsillar nodules, described by Dr. Thos. R. French of Brooklyn. Dr. French has investigated this subject thoroughly and finds that these nodules have a distinct capsule communicating above with that of the faucial tonsil and below with the lingual tonsil, between which two structures they form the connecting link. After removal of the faucial tonsils, it is not uncommon to have hypertrophy of these infratonsillar nodules so that they may grow into the tonsillar fossa, simulating a tonsil that has been only half removed. French has developed a technique for the removal of these masses, and I should suggest that anyone interested should look up the original article in the *New York Medical Journal* or in the Transactions of the American Laryngological Association for 1920.

All operators have at times discouraging results in their tonsil work. The so-called recurrences are most frequently, I believe, due to the cause I have outlined and possibly to other extra-capsular lymphoid nodes in the pillars.

Dr. W. H. Sears (Huntingdon, Pa.): Concerning the criticisms of the operations of other men—about six weeks ago I operated on a patient, in which everything was perfectly clean. The other day the patient came in to see me and in the middle of the fossa was some lymphoid tissue.

Dr. Nebinger (in closing): A prolongation of the lingual tonsils involving the plica is frequently the cause of this nodule as Dr. Coates has well said.

For control of hemorrhage in this area I use a short curved needle and catgut. I have little fear of any uncontrollable bleeding under these circumstances. In

our last 350 cases we have had three cases with secondary bleeding. Two occurred within six hours after operation and were controlled by pressure; the last one was a delayed secondary hemorrhage, occurring ten days after operation and required a suture for its control.

SELECTIONS

THE X-RAY DIAGNOSIS OF GAS GANGRENE.

A. Z. RITZMAN, M.D.
HARRISBURG, PA.

During the past few months there have occurred in and about Harrisburg four cases of infection by the Bacillus Aërogenes Capsulatus Welchii, two of which were diagnosed by means of the x-ray. The diagnosis was confirmed by the x-ray in the third case which, although it had all of the typical symptoms of gas gangrene, showed no crepitus. The fourth case was diagnosed without the assistance of the x-ray. Gas gangrene is not a new infection, having been recognized in the sixteenth century. It is, however, rather rare in civil life but quite common in warfare. It is usually sudden in its onset and very disastrous in its consequences.



Figure 1

On account of the virulence of the infection this disease must be recognized early if we hope to save the life of the patient, or better, save the infected part. For this reason we must resort to all available methods to make an early diagnosis.

The aids to diagnosis are: the history, the



Figure 2-A

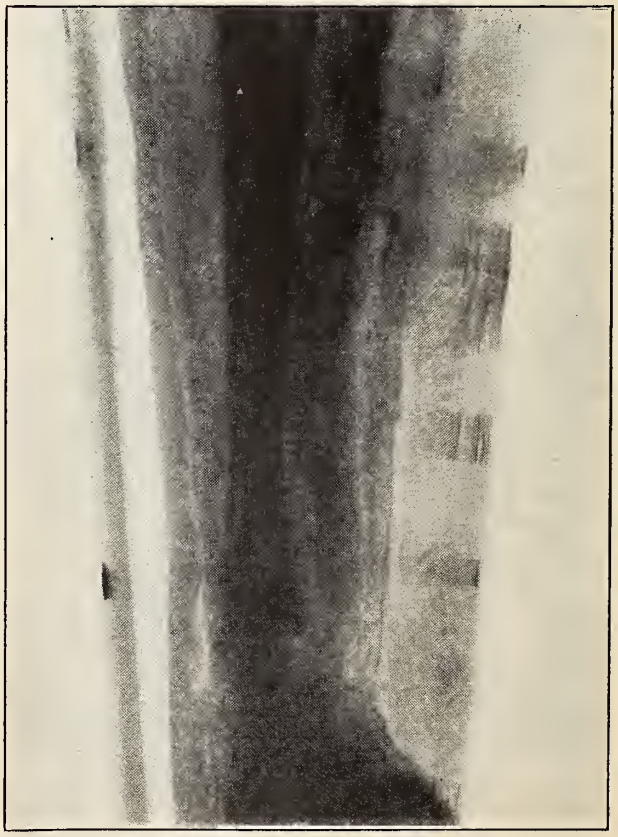


Figure 2-B

odor, which is very characteristic (in fact, so characteristic that a diagnosis may be made from this one symptom alone, in a far advanced case), the gas crepitation in the tissues, rise in temperature, subnormal temperature when in shock, rapid pulse, marked depression, rapid gangrene, finding the Bacilli Welchii by the microscopic examination of a smear, and the radiograph showing the gas.



Figure 3-A

The x-ray is one of the most efficient means of diagnosis, as a very small amount of gas in the tissues can be detected early, probably hours before the odor becomes characteristic and before tissue crepitus can be detected. And in such a virulent condition a few hours may decide whether or not the life or the limb of the patient may be saved.

The earliest diagnosis that we made by x-ray findings was about twenty hours after the accident through which the infection occurred. However, at this time there was considerable gas in the tissues and the diagnosis could probably have been made some hours before.

Where the history and nature of the wound are favorable to the development of gas gangrene infection, an x-ray examination should be made every six or eight hours during the first few days, at any rate, if there is temperature, depression or rapid pulse. If this were always done, with our present effectual treatment, there should be no fatalities from this dreaded disease, as it seems reasonably certain that the radiograph would reveal the infection before any of the other typical symptoms are present.

Dr. Frederick Christopher of the U. S. Army, in writing from France says: "The roentgenologic examination is a helpful means of arriving at an early diagnosis in gas gangrene." He says that Morgan and Vilvandre, during routine examinations for pieces of metal or for fractures, have demonstrated the presence of gas that was entirely unsuspected until the x-ray revealed it.

He states that the x-ray appearance of gas is usually that of (1) bubbles in strings; (2) broad cast; (3) in a layer under the skin; (4) with cloud-like outline to the shadows; and (5) as a striation. He says that the bubbles are not necessarily circular, but may assume the shape of the cavities in which they are located.

He adds that among the causes of failure in making an x-ray diagnosis are the following: Ecchymosis; syringing the wound with hydrogen peroxide; shadows made by wounds; surgical emphysema; normal and abnormal structures (such as popliteal space, bursæ, hematomas, etc.) But repeated radiographs and the clinical symptoms would very soon eliminate the above conditions.

Donald Guthrie, in a paper on gas bacillus infection, refers to the value of the x-ray in detecting collections of gas in the muscle sheaths and fascia planes far remote from the site of the infection in wounds, these collections having been overlooked at the time of operation.

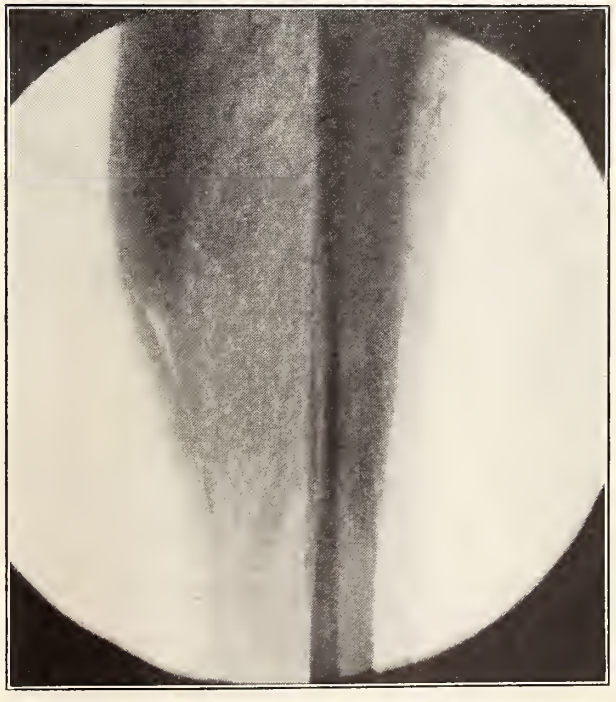


Figure 3-B

From the few cases I have seen, it appears that the gas bacillus invades (1) muscle, (2) subcutaneous tissues and (3) the skin.

Figure 1 shows a case in which air had gained access to the tissues through a bullet wound.

Short histories of the cases which we were able to study by radiograph follow:

Case 1: E. K., was shot with a 22 calibre bullet which passed directly through the knee. An x-ray



FIGURE 4-A

examination was made to determine whether there was any bone injury or whether chips of the bullet remained along the course of the wound. The radiograph revealed no bony injury but showed a collection of air bubbles posterior to the lower third of the femur. As there were no other symptoms of gas bacillus infection, it was apparent that this air had entered through the bullet wound. We however, directed that another x-ray examination be made in case fever, subnormal temperature, rapid pulse or depression developed. None of these symptoms, however, appeared.

Case 2: W. P., a girl, seven years of age, spending her vacation in a small country town. On June 26, 1922, while playing near an out-toilet and stable, fell upon some railroad ties, injuring the left arm and elbow. A small piece of glass caused a laceration of the forearm about three-fourths of an inch in length and rather superficial, but bleeding freely.

A local physician treated the wound antiseptically, reduced a fracture and advised an x-ray examination to determine the position of the fragments. She consulted her city physician on the evening of June 27th. He noticed some swelling but not more than would be ordinarily expected.

She was referred to me for an x-ray examination and presented herself at my office on the morning of June 28th. The portion of the hand not covered with bandages was very much swollen, discolored, cold and clammy (radial pulsation was not detected, showing obliteration of the circulation, due to the air pressure in the tissues.) Several large blisters were noted, which discharged a very offensive, brownish fluid. The arm, above the bandags, was also swollen and appeared mottled, but was warm. Her face was flushed and she was very much depressed.

The radiograph (Figure 2-A) shows several fractures near the elbow, but what impressed me most was the mottled appearance of the soft tissues of the entire forearm, hand and finger, (Figure 2-B) also the lower portion of the arm—In fact, as far as the radiograph was taken. In the lower portion of the arm only the muscle was involved, due to the invasion of these tissues by gas. A diagnosis of gas gangrene was made and the child at once sent to a hospital where the arm was freely incised (gas escaping with an audible sound) and tetanus perfringens antitoxin administered. The life of the child was saved but she lost her arm a few inches below the shoulder joint.

Case 3: Mr. J. F. R., aged 52, farmer. On the morning of July 15, 1922, while spreading manure with a manure spreader, the machine struck him below the right knee and pinched him in the popliteal space, causing several lacerations. He called his physician, who treated the wounds antiseptically. The following morning his leg was cold, clammy and discolored. He again called his physician, who referred him to a hospital. When admitted on July 16 at 11:55 p. m., he was in a state of profound shock. The skin was cold and clammy, temperature 96.2, pulse rate 100, weak and rapid. He was semi-delirious, but responded to



FIGURE 4-B

questions. His leg was gangrenous from the knee down, cold, without sensation and had a very offensive odor. His thigh and lower abdomen were red and swollen, but neither his leg nor thigh showed crepitation. An x-ray examination (Figures 3-A and 3-B) was made on the morning of July 17, and showed a

great deal of gas in the tissues of the leg and thigh. Antitoxin was administered at once but the patient died shortly after the administration.

Case 4: Mr. W. A., colored, aged 23. About 1:30 p. m., on August 16, 1922, in an automobile accident, the patient received a compound, comminuted fracture of the upper third of the left tibia, the bone protruding. He was admitted to the hospital at once and was operated upon about one hour later, at which time some of the loose pieces of bone were removed, the fracture reduced and the wound treated antiseptically. At midnight his temperature was 99.4; at 4 a. m., August 17, 100; at 8 a. m., 101; at 4 p. m., 102.3; and at 8 p. m., 103.2, his pulse varying between 120 and 160. At 8 a. m., August 17, the patient complained of the bandages feeling too tight. His toes were cold, discolored and without sensation. He had little or no pain. An x-ray examination (Figures 4-A and 4-B) was made about 10 a. m., August 17, or about twenty hours after the accident, at which time there was considerable gas formation about the site of the fracture, although there was no crepitus, no odor and no gangrene. Gas bacillus infection was diagnosed. Antitoxin was administered. The leg, after becoming gangrenous, was amputated above the knee and the patient made an uneventful recovery.

234 State Street.

THE PROSPECTS OF A MEDICAL CAREER*

BROOKE M. ANSPACH, M.D.

PHILADELPHIA, PA.

In the opening scene of Marchin and Guernon's play, entitled, "The Eyes of Youth," the heroine is beset with doubt as to which of two suitors to choose for a husband. While in this quandry, a magician from the East shows her a crystal ball into which those who gaze may see their fate spun out before them. Thus gazing, with the one she foresees a life of misery, and with the other, a lifetime of happiness, and her problem is solved. As we approach a new era in our lives, how much more confidently we might proceed could we but see what lies in store for us!

Some of you to-night stand at the threshold of your medical career; others are about to pass through its portals—and I may perhaps rightly conclude that you are all curious as to what the future holds. Indeed, it would not be strange if you should long to do a little crystal gazing for yourselves, in order to satisfy that inborn desire of the human heart to see into the future—the ever-present problem that holds our interest and serves to make us "carry on."

In choosing medicine, you have selected one of the oldest of the professions. It is, in truth, "as old as the hills." We cannot trace its origin beyond a certain point, but we know that the care of the sick and the healing of wounds were practiced for many centuries before Christ. Osler says:

"Medicine arose out of the primal sympathy of man with man; out of the desire to help those in sorrow, need, and sickness." He believes that Celsus was probably correct in his assumption of the origin of rational medicine: "Some of the sick, on account of their eagerness, took food on the first day; some, on account of loathing, abstained; and the disease in those who refrained was more relieved. Some ate during a fever, some a little before it, others after it had subsided, and those who had waited to the end did best. For the same reason some at the beginning of an illness used a full diet, others a spare, and the former were made worse. Occurring daily, such things impressed careful men, who noted what had best helped the sick, then began to prescribe them. In this way medicine had its rise from the experience of the recovery of some, of the death of others, distinguishing the hurtful from the salutary things."

The earliest recorded physician, dating back some sixty centuries, was Imhotep, an Egpytian, of whom Breasted says:

"In priestly wisdom, in magic, in the formulation of wise proverbs, in medicine, architecture, this remarkable figure of Zosers' reign left so notable a reputation that his name was never forgotten, and 2,500 years after his death he had become a God of Medicine in whom the Greeks, who called him Imouthes, recognized their own Æsculapius."

Before the Grecian period of medicine there are evidences also of the existence of Assyrian, Babylonian, Hebrew, Chinese, and Japanese healers. But it remained for Greece to give us the first clear accounts of these healers, and whereas the physician of the primitive races was evolved from the priests, in Greece he developed from both the priests and the philosophers.

At the dedication of the new buildings of the Washington University Medical School at St. Louis in 1915, George Edgar Vincent, then President of the University of Minnesota, drew a fanciful analogy between that dedication and the opening of the new pavilion of the hieron of Æsculapius at Epidaurus in Argolis, on the Gulf of Ægina, about the third century B. C. There, too, was a group of hospital buildings—ward and administration; there also were an animal house, a gymnasium and baths, as well as a theater seating 20,000 persons, and a stadium *600 feet* long and seating *12,000*. "The resident staff of physicians was on a full-time basis; the fees went to the hospital." He twitted his audience, which, of course, was proud of its new university buildings, by saying that evidently they were helplessly behind the times of Greece, and he jocularly extended his sympathy. Later he admitted how absurd it was "to try to conceal beneath superficial likenesses, differences so essen-

*Address delivered before the student body of Jefferson Medical College, at the opening of the ninety-eighth session, September 25, 1922.

tial and profound" as there are between the medicine of the days of Greece and of the present day. *Then* there was a mythical leader and the practice of the art was founded on tradition. The priests of medicine and surgery were "promoters of superstition, and incidentally and empirically they hit upon fragmentary truths." *Now,* no leader is born who does not survive the careful scrutiny of his fellows; empirical practice has fallen into disrepute except in those cases in which it is explained and supported by scientific facts; and the medical profession is united in a search for truth wherever it may be found.

How many names might be recalled of those who, by a life of devotion, have contributed to the progress of medicine! With the most notable workers and with the gifts they gave to the science, you should be familiar.

The legendary Greek god of medicine, Æsculapius, is known as the father of medicine, and "for more than a thousand years—he has been the consoler and healer of the sons of men." (Osler.) Hippocrates, another Greek, who was born about 460 B. C., was the originator of the Hippocratic oath, which for 25 centuries has been the creed of the profession, and in many universities is "still the formula with which men are admitted to the doctorate." Aristotle, the greatest of the Greek philosophers, was born B. C. 384; of him Osler says, "the history of the human mind offers no parallel in his career." Galen, also Greek, born about 130 A. D., was the first anatomist and physiologist. Paracelsus, a German, born in 1493, and called the "Luther of Medicine, the incarnation of the spirit of revolt," upset many of the faulty theories of his day.

Vesalius, a Belgian, of the sixteenth century, the creator of the modern method of teaching anatomy, instituted dissection of human and animal subjects. Harvey (English, 1578), discovered the circulation of the blood. Morgagni (Italian, 1682), was the pioneer in the study of morbid anatomy. Sydenham (English, 1624), called the English Hippocrates, first taught the doctrine of nature's tendency to cure. Boerhaave (Dutch, 1668) was famous as a teacher, and was called the Dutch Hippocrates. John Hunter (English, 1728), who gave immense impetus to the study of morbid anatomy, inoculated himself with syphilis in order to substantiate the position he had taken in the dispute as to whether syphilis and gonorrhea were identical.

Jenner (English, 1749) was the discoverer of vaccination, which has practically eliminated smallpox. Corvisart (France, 1800) was the pioneer in clinical teaching. Auenbrugger (an Austrian) in 1761, invented the art of percussion as a diagnostic aid. Bichât (France, 1771) by his work gave great impetus to the study of scientific medicine. Laennec (a Breton by birth) discovered auscultation in 1819 and invented the stethoscope. Liebig (Germany, 1803), the chemist, who opened his laboratory in 1825, fostered advances in chemistry during the nineteenth century, "the importance of which can scarcely be over-estimated." Virchow (German, 1821), the originator of cellular pathology, drew attention to the cells, the component parts of the tissues, as being the seat of disease. Morton (American, 1846) discovered ether.

Pasteur (France, 1865), the first bacteriologist, was the originator of the germ theory of disease. Koch (German), who elaborated Pasteur's observations, discovered the tubercle bacillus in 1882. He first isolated germs outside the body, and then, by inoculation, reproduced the disease in animals. Joseph Lister (Scotch, 1867) inaugurated the antiseptic era of surgery. Ephraim McDowell (American, 1771-1830) was the first ovariotomist and the founder of abdominal surgery. Bernard (France, 1813) and Addison (England, 1793) in 1855, laid the foundation for the study of the ductless glands. Schaudinn (German, 1871-1906) in 1905 isolated the spirocheta pallida, the pathogenic organism of syphilis. Ehrlich (German, 1854-1915), who gave the world his epoch-making views on immunity, in 1910 produced salvarsan ("606") and neosalvarsan, the intravenous specifics for the treatment of lues.

As one reviews the achievements in the medical art, none is perhaps more striking than the results of sanitation.

For centuries malarial fever was a world-wide scourge. It is said that the physical degeneration of the Greek and the Roman races in the latter days of these empires was, in part at least, due to malarial infection. The specific action of quinin and of other derivatives of cinchona bark was learned by accident in 1638, and was for a time spoken of as the Countess's secret, referring to the Countess of Chinchon, who was cured by the remedy. In 1880 Laveran discovered the protozoa of malaria, and in 1898, Sir Donald Ross demonstrated that the disease was transmitted by the bites of certain varieties of mosquitoes (Anopheles). In one district of India, during the last four months of 1908, one-fourth of the total population suffered from malarial fever, with 400,000 deaths, nearly all attributable to this infection.

Yellow fever was another scourge that sanitation helped to conquer. In an epidemic here in Philadelphia in 1793, 10,000 deaths from this disease occurred within three months. The death rate from yellow fever among the British soldiers and sailors in the West Indies was appalling. For the twenty years ending 1836, the average death rate was 101 per thousand.

The theory that the yellow fever parasite was transmitted by the mosquito was first promulgated by Carlos John Finlay of Havana, an alumnus of this college, class of 1865. His findings were confirmed by the work of Walter Reed and his associates, among whom was the martyr and hero, Dr. Jesse W. Lazear, who allowed himself to be bitten by the mosquito (Stegomyia fasciata) and died from the disease.

The greatest feat ever achieved as the direct result of sanitary regulations was the building of the Panama Canal. Proposed as early as 1551, in a memorial submitted by de Gomara, the Spanish historian, to Philip II of Spain, the project was soon abandoned, and "the plague-stricken isthmus was left to the negroes and half-breeds."

In 1849 the gold rush to California made the construction of a railroad across the Isthmus of Panama necessary. This was completed in 1855, and it is said that "every tie cost a human life."

In January, 1881, Ferdinand DeLesseps attempted to bring to realization the dream of navigators and practical engineers. "The story of the French Canal Company," says Osler, "is a tragedy unparalleled in the history of finance, and one may add in the ravages of tropical disease." Yellow fever, malaria, dysentery, typhus, all exacted a frightful toll, the death rate reaching 176.97 per thousand of the working people.

In 1907, the construction of the canal was again undertaken at the instigation of Theodore Roosevelt, and thanks to the progress of medicine during the previous two decades, the work was completed—an achievement that would have been impossible but for the hygienic and sanitary regulations instituted in the Canal Zone by the medical director, Dr. W. C. Gorgas. Through his wise counsel and inflexible regulations tropical diseases diminished, and the death rate was reduced from 8.49 per thousand in 1906 to 0.11 per thousand in 1918.

How few cases of typhoid fever there are now! Not quite so many, perhaps, as your teachers of medicine would care to have, for clinical purposes; and yet time was when every year had its epidemic. This scarcity of cases is the result of water filtration and of the avoidance of pollution of the water supply.

How long, during the late war, would the armies of the world have remained in the field, if inoculation against typhoid fever had not been nearly universal?

What an arrest in the spread of the great white plague (tuberculosis) was affected by the education of the layman and the application of a few simple rules of hygiene, all founded upon the truths revealed by medical science!

Not only in medicine, but in the general progress of the world and in other fields of endeavor, members of our profession have taken a place and have achieved fame. Relative to this fact, Daniel Weaver has collected some interesting data.

Otto Brunfels, a physician of Berne, is really the father of the botanical sciences. Benjamin Barton, a Philadelphia physician, and Jacob Bigelow, a Boston practitioner, acquired a world-wide reputation as botanists before Americans "attracted much attention in literary fields."

Dr. Theodor Schwann was the founder of biology. John and William Hunter, of England, leading physicians of their day, were also eminent naturalists. Joseph Leidy, of Philadelphia, was the pioneer zoölogist. Lothar Meyer, of Germany, and John Berzelius, of Sweden, made important advances in chemistry. Sir Thomas Browne wrote "Religio Medici," which has been read attentively for nearly three centuries; it was this book, it is said, that made Osler decide to study medicine.

Oliver Wendell Holmes and S. Weir Mitchell, whose writings have delighted the world, were both famous as physicians. Holmes was Professor of Anatomy at Harvard, whereas Mitchell was one of the leading neurologists of his time. Holmes' poetic outburst, "Old Ironsides," saved the frigate "Constitution" from destruction for many years, and his writings, notably the breakfast table series, reveal "humor of indescribable and rarely equalled delicacy and brilliancy." Mitchell, in his book, "Hugh Wynne," Quaker, has charmingly portrayed Continental Philadelphia, and inculcated in us the desire to be true Americans. Dr. John Brown wrote "Rab and His Friends," a book that has provided healthful entertainment for many a school boy.

Dr. Wilfred T. Grenfell was an heroic missionary to the scattered people along the coast of Labrador—two hundred and fifty thousand of them, chiefly fisherfolk and fur traders, spread over several thousand miles of seacoast. In that land the rivers are few, the trees are sparse or absent, and the agricultural resources are practically nil. The summers are short and the winters long—30 feet of snow covering the earth. The natives live on a restricted diet, their dwellings are unhygienic, and tuberculosis is pitifully common. For these people Grenfell provided missions, hospitals and facilities for education. His work stands unrivalled.

Dr. David Livingston (Scotland, 1813) first penetrated the interior of darkest Africa. Originally a medical missionary, he later became an explorer. "In the annals of exploration of the Dark Continent," wrote Stanley, "we look in vain among other nationalities for a name such as Livingston's. He stands preëminent above all." Britain excelled herself even when she produced the strong and perseverant Scotchman. "His example acted like an inspiration, filling Africa with an army of explorers and missionaries, and raising in Europe so powerful a feeling against the slave trade, that through him it may be considered as having received its death blow." (Encyclopedia Britannica).

Benjamin Rush of Philadelphia, Josiah Bartlett of New Hampshire, Lyman Hall of Georgia, and Oliver Wolcott of Connecticut, were all signers of the Declaration of Independence, and the last three named were governors of their respective states. All were members of the medical profession.

The personal service rendered by medical men in the World War was more than notable. Of the Victoria Crosses awarded by the British, one of the first went to a surgeon who remained at his post dressing soldiers returning from the field of battle after he himself had been mortally wounded.

Gentlemen, you have chosen an honorable profession. When reduced to ultimate principles, can there be one of greater importance? Can anything be more gratifying to the donor—call forth more freely the thanks of those to whom it is extended—than bestowing relief on the suffering? Christ himself was called the "Great Physician." Does anything excel in beneficence the mitigation of distress to the pain-racked sufferer? Can a man spend his life more worthily than in such a cause? It may be questioned who has the loftiest purpose and the highest achievement—the clergyman, the lawyer or the doctor?

Far be it from me to underrate the services of the clergyman. He is our spiritual caretaker, and the advocate of religion, which, after all, is the backbone and sinew of the nation; and I acknowledge freely the sanctity of the law and the high code of ethics that prevails among the best of its exponents and administrators. But who will not concede that the doctor has more intimate knowledge of his patient than the clergyman can have of his parishioner or the lawyer of his client? To whom must more perilous secrets be confided; to whom is it given more frequently to keep the family skeleton safely locked in the closet? Listen to Robert Louis Stevenson's estimate of the physician:

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower, such as it is, of our civilization; and when that stage of man is done with and remembered only to be marveled at in history, he will be thought to

have shared as little as any in the defects of the period and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments, and, what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."

You have chosen rightly in coming to the Jefferson Medical College for your preparation for this honorable calling. Here there is everything to inspire you. You may glory in her traditions, and in after years may your affection for her be like that which Daniel Webster had for Dartmouth, his alma mater, when he said, "She is a small college, but there are those who love her dearly."

The Jefferson Medical College was founded in 1824, through the initiative of Dr. George McClellan. Since that day many men who have attained national or world-wide fame have been numbered among its faculty and alumni. Let us recall a few of them:

There were Thomas D. Mütter and Joseph Pancoast. The former possessed extraordinary ability as a teacher. "He was eloquent, polished, and much beloved by his classes." His memory is perpetuated in Philadelphia by the Mütter Museum and the Mütter lecture course at the College of Physicians. He was equally successful both as a clinical lecturer and as an operator. "The surgical clinic, by the associated zeal and efficiency of Mütter and Pancoast, became so famous that the amphitheatre was crowded with practitioners from all parts of the country." (Holland.)

Samuel D. Gross, or, as he is called, the "elder Gross," was famous as a writer for his "eloquence and lucidity"; as an operator, "for his skill," and as an individual for his "imposing presence." His library, consisting of about 8,000 volumes, now reposes at the College of Physicians. Others are: John Kearsley Mitchell, first advocate of the view that malarial fever, yellow fever and cholera were caused by bacterial infection; Charles D. Meigs, famous as a scholar, eloquent lecturer and writer on obstetrical subjects; Franklin Bache, coworker with Wood in the preparation of the first pharmacopeia; Robley Dunglison, a "rare combination of splendid culture and vast erudition"; Roberts Bartholow, army surgeon, physiologist, sanitary reformer, writer and physician—a therapeutist whose avowed aim was "to stem the tide of therapeutic nihilism"; Theophilus Parvin, the professor of obstetrics and diseases of women in 1883; Samuel W. Gross, called the "younger Gross"; Jacob M. Da Costa, the "physicians' physician" (professor of medicine in 1872), noted for his diagnostic accuracy, skill in the use of remedies, his wide and well-ordered knowledge of medicine and his still greater knowledge of men. (Kelly and Burrage.) Did time permit, many others might be mentioned of whom Jefferson is justly proud.

The old amphitheatre that has just been demolished was completed and opened for use May 1, 1877. For 44 years it was in daily use. The memory of many Jefferson men will hark back to it. Of this amphitheatre the former dean of the College, James W. Holland, wrote: "The amphitheatre of the Jefferson Hospital became renowned for the extent and quality of the clinical teaching which it afforded. It was the arena in which operated such surgeons of imperishable fame as the Grosses and the elder Pancoast. There, the illustrious J. M. DaCosta taught and the erudite Bartholow lectured. There spoke Levis, Parvin, Wallace, Biddle, Brinton, Maury, and others. There as guests have stood Esmarch of Kiel, Mikulics of Breslau, Faure of Paris, Lorenz of Vienna, Bryant, Durham, Horsley, Balance and MacCormack of London, Macewen of Glasgow, Lawson Tait of Birmingham, Annandale and Cheyne of Edinburgh, Emmett, Weir and Thomas of New York, Senn of Chicago, our own Marion Sims, and a host of others." On the site of the old building the new will rise, and let us resolve that the fame of the old amphitheatre at Jefferson may be renewed in the one now in course of construction.

There are many problems in the science of medicine that are yet to be solved. A teaching institution such as this should not only give its students a practical and working knowledge of the theory and practice of medicine as its exists to-day, but should also, by precept and by the example of its faculty and teaching staff, inculcate in the entire student body the spirit of scientific observation and investigation. We dare not rest content with present knowledge; we must learn more. We must strive to foster this spirit, else we stagnate and decay.

Probably in no branch of medicine more than in physiologic chemistry are there greater potentialities for discovery that will increase our value as physicians. Of the possibilities of the röntgen-ray for diagnosis and treatment, it may be said that the surface "has not yet been scratched." It is confidently believed that in the gamma-rays of the Röntgen tube and in radium lies the hope for the cure of malignant disease. Nothing positive is known at present, for methods must be improved and further observations are imperative. How valuable an aid it will be when we can measure deficiencies in the secretion of the ductless glands or recognize accurately the relative disordered functioning of associated glands! What would not the obstetrician give to understand positively the pathology of the toxemias of pregnancy!

During the next decade great changes will take place in the relationship between medicine and the state. Already the civic and the state departments of health are recognized as of the greatest importance. Some day there will be a National Secretary of Health. State appropriations for the maintenance of hospitals will undergo changes and economic readjustment will be made, so that every sick person, regardless of his circumstances, will receive the best medical attention, for which he will be liable according to his ability to pay. What a prospect!

Does it not stir you to realize that you have a chance to play a part in the solution of these problems?

And now what about yourselves and your own medical careers? It is not disconcerting to say that some of you will be failures, nor is it flattering to predict that many of you will be successful. There are some in this audience who will be leaders of their profession, whose names will be writ high on the school of achievement. Your future depends largely upon your own efforts, for though men are by no means created equal, like genius, success is dependent on the capacity for work—not work unqualified —not blind and useless toil, but intelligent and well-directed endeavor. You must instill in yourself the desire to become successful, and then leave no stone unturned to accomplish your end fairly and squarely. Consider the words of Addison:

"'Tis not in mortals to command success
But we'll do more, Sempronius—we'll deserve it."

What other factors are essential to success? Does success depend on opportunity or on the intelligence and the will to grasp the opportunity when it presents itself? "The golden opportunity is never offered twice; seize then the hour when fortune smiles and duty points the way; nor shrink aside to 'scape the spectre fear—nor pause though pleasure beckon from her bower; but bravely bear thee onward to the goal."

Alexandre Dumas, in his novel "The First Republic," pictures Napoleon, an obscure artillery captain, alone in his shabby quarters in Paris at night. He is sought out by Barras, who offers him supreme command of the convention forces in the battle that is expected to take place on the morrow. He exclaims, when the full realization of the opportunity comes upon him, "O Fortune, Fortune, do I grasp thee?" The following day, the 13th Vendémiaire, opened up his astounding career. But was this luck? Had he not, by previous exploits, marked his way with Barras; and would he confidently have been enabled to accept the offer if he had not felt qualified by his previous work and experience? Hear what Sir Walter Scott says of chance:

"Chance will not do the work. Chance sends the breeze;
But if the pilot slumber at the helm, the very wind that wafts us toward the port
May dash us on the shelves.
The steersman's part is vigilance,
Blow it or rough or smooth."

Prepare yourselves, therefore, so that when your opportunity comes, you will be ready to grasp it. Do not wait for "something to turn up." Strive to impress on yourself the belief that there is no such thing as destiny. Perhaps you have read the striking story of O. Henry, "Roads of Destiny." In this tale a young artist quarrels with his sweetheart and leaves his home by the road to Paris. He comes to a cross-roads, and hesitates as to which road he should take, the one on the right or on the left. To show that it made no difference what his decision was, the author relates what befell him on taking the right-hand turn, and then on taking the left-hand turn, and then upon retracing his steps when he decides to go back home. In each case, but by a totally different course of events, he is killed by a bullet from the selfsame pistol of a certain nobleman. It made no difference which way he went, he *had,* alas! to die! This is merely a clever story; it may please us and we may admire the author, but it should not be taken seriously. We dare not be indifferent to our daily tasks; we must not believe that our fortunes are predestined. Such a belief would be fatal. "Everyone is the architect of his own fortune."

In the first two years of your course much of your time will be devoted to subjects that are not intimately connected with the practice of medicine; many of these you will forget, at least in part, before your course is completed. The subjects may seem to be irrelevant, and you may think the time expended on them wasted. But remember that your teachers have given much thought to formulating the curriculum and have included nothing that is unessential. Apropos of this very point Oliver Wendell Holmes says:

"Yet pause a moment before you infer that your teachers must have been in fault when they furnished you with mental stores not directly convertible to practical purposes, and likely in a few years to lose their place in your memory. All systematic knowledge involves much that is not practical, yet it is the only kind of knowledge which satisfies the mind, and systematic study proves, in the long run, the easiest way of acquiring and retaining facts which are practical. There are many things which we can afford to forget which yet it was well to learn. Your mental condition is not the same as if you had never known what you now try in vain to recall. There is perpetual metempsychosis of thought and the knowledge of to-day finds a soil in the forgotten facts of yesterday."

In conclusion, let me advise you to be industrious. Do not fail to play in playtime, and put all your heart into your play; but be sure that your working hours have been so employed that something has been accomplished, something done. In the words of Roosevelt, "Hit the line hard." Lose no opportunities, and never regard

anything associated with your study here or with your work later as a trifle.

In his autobiography, Andrew Carnegie recalls the fact that when he was offered his first "real job" in this country his prospective employer asked him when he would be ready to come to work. His answer created surprise when he said that he was ready *then* and that he would stay right on and work. He did this because he wanted to be sure of the position, and he figured correctly that if he delayed, something might occur that would deprive him of the coveted chance. He says: "On such 'trifles' do the most momentous consequences hang. A word, a look, an accent, may affect the end not only of individuals, but of nations. He is a bold man who calls anything a trifle."

Do you recall what was flashed back when the British admiralty inquired by wireless of our destroyer fleet on its way across the Atlantic, "How soon after arrival will you be ready for active service?" The answer was simple but impressive. Did they say they would be ready in two days or in two weeks after arrival? No! They said "*On* arrival." They were ready any time—all the time!

Be courageous! You will have many discouragements. Remember the outstanding hero of the late war, Ferdinand Foch. He had always held it as an axiom that "A battle won is a battle in which one is not able to believe one's self vanquished." He would never give up. Finally his opportunity arrived, and at the battle of the Marne he turned disaster into victory and by the very boldness of his action threw the adversary into confusion and dismay. His telegram to headquarters read—mark you the courage and the faith of the man—"My center gives way; my right recedes; the situation is excellent; I shall attack!"

Seek to acquire nobility of character. Do right, as Abraham Lincoln said, "as God gives you to see the right." Socrates, who taught the youth of Athens, was fond of repeating the words of Solon, *"Knothi Kairon"* ("Know thyself"). Andrew Carnegie held as his rule of conduct the lines of Robert Burns: "Thine own reproach alone do fear."

What better advice can I leave with you in parting than the words from Shakespeare, found in

POLONIUS' ADVICE TO HIS SON

Give thy thoughts no tongue,
Nor any unproportioned thought his act.
Be thou familiar, but by no means vulgar.
The friends thou hast, and their adoption tried,
Grapple them to thy soul with hooks of steel;
But do not dull thy palm with entertainment
Of each new-hatched, unfledgéd comrade. Beware
Of entrance to a quarrel; but, being in,
Bear it, that the opposer may beware of thee.
Give every man thine ear, but few thy voice:
Take each man's censure, but reserve thy judgment.
Costly thy habit as thy purse can buy,
But not expressed in fancy; rich, not gaudy;
For the apparel oft proclaims the man;
And they in France, of the best rank and station,
Are most select and generous, chief in that.
Neither a borrower nor a lender be:
For loan oft loses both itself and friend;
And borrowing dulls the edge of husbandry.
This above all—to thine own self be true;
And it must follow, as the night the day,
Thou canst not then be false to any man.
Farewell; my blessing season this in thee.

THE SCHICK TEST*

E. ROBERT WIESE, M.D.
INGOMAR, PA.

Whether it be because of some inherent characteristic of the bacillus or because of the personality of the investigators who have made it a study, is not the province of this paper but the fact remains that among all the pathogenic microörganisms constituting the science of bacteriology none is more fully understood than the diphtheria bacillus. Since 1821 the disease has borne the name given to it by Bretonneau of Tours, in his classical description, and has been recognized as a clinical entity. The combined work of Klebs and Loeffler gave us the first knowledge in the sense of modern bacteriology. In 1890 von Behring discovered antitoxin, and since 1891 the use of this principle has become more and more established in medicine—so much so that to-day of all the remedies used in the treatment of diphtheria prior to the discovery of antitoxin, not one is of any, save historical, significance. The reduction of mortality from diphtheria since the general use of antitoxin in the early stages of the disease has been so striking that antitoxin is classified as one of the most valuable specifics we possess. The use of antitoxin, however, is largely therapeutic; the immunity conferred is of too short duration to prove of any except transient value. Moreover, in its use as an immunizing agent no discrimination is made between those who are susceptible and those who are naturally immune to the disease. But the reproach that the innocent must suffer with the potentially guilty, when using antitoxin as an immunizing agent, has been removed by the introduction of the Schick test, whereby the susceptibility of an individual to diphtheria may be easily and absolutely determined.

*Read before the Scientific Meeting of the Allegheny County Medical Society, Pittsburgh, Pa.

The result of the Schick test is the individual's reaction to a minute quantity of diphtheria toxin —properly diluted—injected preferably into the skin of the forearm. Contrary to what is generally believed, the test is not difficult, although this point is rarely emphasized. This is not by any means to be interpreted as a statement that definite technic is not essential.

Results, to be trustworthy, depend upon three —at least three—factors:

1. The material used must be of standard strength.

2. The method of injection must be correct.

3. The interpretation of the result must be accurate.

The Material Used Must Be of Standard Strength.—The solution injected must be sufficiently powerful to produce a positive reaction in a person not naturally immune to diphtheria. On the other hand it must not be so concentrated as to produce sloughing at the point of injection. One one-fiftieth of the minimal amount necessary to kill a guinea pig is the quantity injected. Schick prefers this in 0.1 c.cm. of normal saline solution, while Zingher, at whose clinic I had both the pleasure and honor of being a visitor last November, uses 0.2 c.cm. of normal saline as a diluent. The larger amount of fluid obviously produces a more definite wheal and is more easily manipulated. Complete outfits for carrying out the test may be had from many of the reliable commercial laboratories. In our work we used the material supplied by the H. K. Mulford Company. The outfit consists of a small glass capillary tube containing the toxin, a small rubber bulb for expelling the toxin from the tube and a glass bottle containing normal saline solution sufficient to make the correct dilution when mixed with the toxin. A second bottle contains the toxin control solution. The test is absolutely harmless.

The Method of Injection Must Be Correct.—One point cannot be too strongly insisted upon. The injection must be made, not hypodermically, but intradermically. The solution is injected not into the deep tissues but into the skin itself. The reaction depends upon the local irritant effect of either the diluted toxin, the autolyzed protein of the diphtheria bacillus or both. Reliable syringes and fine needles are indispensable to good work. We have found the Schick test outfit made by the MacGregor Instrument Company to meet with every requirement. It consists of two 1.0 c. cm. glass syringes (both graduated to one-tenth of a c. cm.) and two 26-gauge, ¼-inch needles. One of these syringes is used exclusively for the diluted toxin and the other for the control, which is diluted toxin previously heated to 75 C. for ten minutes. Syringes and needles must be sterilized—either by boiling or with alcohol—in the latter event the syringes and needles must be thoroughly rinsed with some of the diluted toxin and the rinsings discarded. It is good practice to have an arbitrarily selected point—say the flexor surface of the right forearm for the injection of the toxin, and a similar point on the left forearm for the injection of the control. Much time and confusion in the interpretation of the results is thereby eliminated.

The Interpretation of the Results Must Be Accurate.—The readings of the results of the injections into the forearms may be divided into four groups: positive, negative, pseudo-positive and pseudo-negative. A positive reaction, indicating that the individual is susceptible to diphtheria, manifests itself by a well defined area of redness about the site of injection on the right forearm only; the left forearm is free of any discoloration. This begins to make its appearance within 24 to 36 hours and does not reach its height until the lapse of four or five days. The reaction persists for a week or even longer, gradually fading with time. A negative reaction, indicating that the individual is naturally immune to diphtheria, evidences itself by the absence of any reaction of any kind at the point of injection on either the right or left forearm. The fact that some persons are unusually susceptible to the autolyzed protein on the diphtheria bacillus is responsible for the pseudo-reactions. All pseudo-reactions make their appearance earlier than the true reactions; they fade with comparative rapidity and generally amount to but a slight discoloration by the time the genuine reactions have reached their height. The pseudo-negative reaction shows equal redness and induration on both the right and left forearms. The pseudo-positive reaction, or as it is so often called "combined reaction," is as the name implies, a combination of the positive and pseudo elements. The pseudo element, however, fades more quickly than the positive and one can, as a rule, avoid confusion by allowing time to cast the decisive vote.

To those who give either a positive or a pseudo-positive reaction we administer toxin-antitoxin—a mixture of the toxin of the diphtheria bacillus and antitoxin. Those susceptible to diphtheria are thereby rendered immune for a prolonged period. It has been proved by Park that such immunity is of at least four years' duration. In view of the fact that the natural immunity of an individual increases with his age, the importance of conferring such immunity upon younger children, at least, will be apparent,

and perhaps the more appreciated when we recollect that of 129 deaths from diphtheria in the city of Pittsburgh during 1921, 79 such deaths were of children under seven years of age. There has been much written about the preparation of toxin-antitoxin, regarding the neutralization of the toxin by the exact amount of antitoxin necessary, etc.; all of which tends to confusion and gives foundation to statements that such treatment might lead to untoward effects. Discussion as to the proper mixture has nothing to do with carrying out the test, and while it is freely admitted that such information may be a source of pleasure to some engaged in general practice, for all practical purposes such knowledge is of no more value, has no more relevancy to the subject, than the knowledge of how to make 606 has to the treatment of syphilis. The toxin-antitoxin, or T. A., as it is called, is injected deep into tissues at intervals of seven days until three such injections have been given. Reactions following such injections, while not common, are not unusual. High fever, a quickened pulse and general prostration are then sometimes seen, but these generally subside within a few days and no other after-effects are found. The reaction following the first injection is generally the most severe. Those giving a combined reaction to the Schick test usually give the more severe reactions to the injections of T. A.

During the past several months I have been permitted to do the Schick test, together with subsequent injections of T. A. wherever necessary, on every boy in Thorn Hill School, a county institution to which boys from eight to eighteen years are committed by the Juvenile Court for minor offenses. The average population is about four hundred and fifty boys. Up to the present (June 15, 1922) we have Schicked 478 cases, of which 109 (22%) were positive. Of the 109 boys who were treated with T. A., three gave severe reactions — that is severe enough to confine them to bed for several days.

As to the value of the Schick test let me cite but one example. One of the boys was taken from Thorn Hill School to one of Pittsburgh's largest and best hospitals, because of a severe burn. He had never complained of any trouble with his throat, nor had there ever been any suspicion of his being a carrier. Routine examination gave, among other findings, a throat culture positive for the Klebs-Loeffler bacillus. As is the rule, this boy had given a negative result to the Schick test—for the test does not pretend to separate carriers from non-carriers. He had, however, been associated and had been in intimate contact with the other boys at Thorn Hill for months, yet none of these boys became infected. Prior to the introduction of the Schick test into Thorn Hill School it was nothing unusual to have different cottages under quarantine for diphtheria. Since we have employed that test there has not been a single case of diphtheria in Thorn Hill School.

CONCLUSIONS

1. The Schick test is harmless.
2. It should be employed in every institution where children are cared for or are congregated for any length of time.
3. It should be as rigidly carried out as vaccination for smallpox in our public schools.
4. Those giving a positive reaction should receive toxin-antitoxin.

I wish to thank Mr. Franklin H. Briggs, superintendent of Thorn Hill School, together with Mr. D. L. Reese and Mr. R. E. McKibben, also officially connected with the same institution, for their assistance and never-failing courtesy. Mr. T. R. McTaggart, of the Pittsburgh Department of Health, deserves my heartiest thanks for his inspiration of this paper.

Wexford, R. F. D. 2.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

HEREDITARY CATARACT AS A MENDELIAN DOMINANT

Report of a Family

DR. W. E. CARSON

The members comprising this family consist of the parents and twelve children. Hearsay information was also obtained of one antecedent generation and one descendant generation, thus making in all four generations.

All members of the family were seen and their eyes examined with dilated pupils, except the oldest child, a daughter, who is married and lives in Detroit, and an infant, who died 5 hours after birth. Two of the children, who were operated upon in the West Penn Hospital, were examined physically with negative results except as to the eyes, and all other members, including the mother and father, appear to be mentally and physically healthy. The teeth appeared to be normal. The father and mother were born in Poland. All the children were born in America. No consanguinity of parents.

The father, (a) Mr. Steve N., age 51. Occupation, miner. Married present wife 1899. Has no knowledge of any of his brothers or sisters or foreparents having

had any trouble with their eyes. Vision O. D. 15/15. O. S. 15/15. Media and fundi negative.

The mother, (b) Mrs. Mary N., age 43. Vision began to fail when about 16 years old, and when she reached 22 could only see to walk. At that time cataracts were removed from both eyes in the city clinic of Cracow. Her mother and younger brother and sister, twins, had no trouble with eyes. Father now living at 69, is blind as the result of rather rapidly progressive failure of vision beginning when about 20 years old. Thought to have cataracts. Never operated upon.

The incidence of cataracts in the children is as follows:

(1) Mrs. Anna N. G., age 24, eldest child of Steve and Mary N. Married. Has a son aged 2 and daughter aged one year. Living in Detroit. Not examined. So far as known she has had no trouble with her eyes and no trouble with the eyes of her children has been reported.

(2) Mrs. Pauline N., age 18. Married in 1922. No children. Vision began to fail when about 8 years old, when she began wearing glasses. Discarded glasses 2 years ago, because they did not help her. V. O. D. 15/70. V. O. S. 15/50. Cannot be improved with glasses. Both lenses show rather advanced opacities, the same being more marked in the left eye. These opacities consist of two elements, a more dense roundish center surrounded by an irregular cornea-like zone made up of irregular spine-like rays. The position is posterior cortical. The condition is evidently slowly progressive and the patient is considering operation.

(3) Master Frank N., age 15. When first seen in September, 1921, the following history was obtained: Vision began to fail rather rapidly when ten years old. Has continued to attend school and has passed his tests, but cannot see well in spite of his glasses. Can still see to get around very well, but feels need of more light. V. O. D. 5/200 with P. C. 15/30. V. O. S. 5/200 with P. C. 15/80.

Bilateral cataracts of same type in both eyes were found, the same being more marked in the left eye. The opacity was well posterior, being between the position of the nucleus and the posterior capsule and was made up of two elements—a central quite dense disc-like opacity, surrounded by a more diffuse and ill-defined recticular-like zone of opacity. There was still a fair sized zone of moderately clear lens substance at periphery.

The cataractous lenses have been removed by absorption, following two discission operations on the left eye and one on the right. The pupils were found clear and glasses were ordered January 24, 1923. O. D. S. + 9.00 = C. + 2.50 ax 90. 6/6 pt. O. S. S. + 9.00 = C. + 2.50 ax 90. 6/30 pt.

(4) Miss Rosie N., age 13. First seen September 6, 1921, when the following history was obtained: Vision began to fail when 9 years old. Tried school but gave it up after one week. The vision has become noticeably worse during the past year and for the past 6 months has had to be guided at times in making her way about. V. O. D.: Counts fingers at 6 inches. V. O. S.: Counts fingers at 2½ feet.

Both eyes showed advanced lenticular opacities, the same being of similar type in both eyes, but were more marked in the right eye. Lens of right eye removed by absorption after three successive discissions. The pupil of this eye was found clear and a lense ordered January 30, 1923. O. D. S. + 13.00 = C. + 1.00 ax 90 6/12. The lens of the left eye is now in process of absorption after a through and through inverted V-shaped discission, according to the method recently described by Ziegler.

(5) Master John, age 12, is attending school, and though he has not complained of any visual deficiency, his vision has been found to be considerably below normal, being V. O. D. 15/50, V. O. S. 15/30. The fundi appear negative and the vitreous clear, but both lenses show slight beginning central opacification. In the right eye this appears as a 1½ mm. disc-shaped opacity with a few thin web-like rays radiating irregularly outward, the same being well posterior and situated between the position of the nucleus and the posterior capsule. In the left eye the opacity consisted of a very small speck-like opacity, from which a few very short filamentous rays extend outward for a distance of ½ to 1 mm., the opacity being in the same relative position of the lens as in the right eye.

(6) Miss Mary, age 9, has no ocular complaint. Making good progress at school. V. O. D. 15/15. V. O. S. 15/15, i. e., normal vision in both eyes. Fundi and vitreous are clear and lenses appear entirely clear.

(7) Miss Eva, age 8, has noticed no trouble with eyes, though testing shows vision considerably below normal. V. O. D. 15/40. V. O. S. 15/40. The fundi appear negative, with details normally brilliant. The lens of the right eye shows the faintest suspicion of a posterior opacity. The left eye shows the same somewhat questionable, minute posterior central opacity.

(8) Miss Helen, age 7. Vision by rough tests not impaired. Fundi, vitreous and lenses appear clear.

(9) Miss Julia, age 4. Vision not evidently impaired. Accurate test not possible. Media, including lenses, appear clear.

(10) Master Steve, Jr., age 2½ years. Media, including lenses, appear clear.

(11) Miss Susanna, age 2½ (twin of Steve). Media, including lenses, appear clear.

(12) Miss Christina, premature at 6 months. Died 5 hours after birth. Nothing known as to eye condition.

Here, then, we have a family otherwise normal and healthy, affected with juvenile or presenile hereditary cataracts. In a family of 12 children, born of a normal father and cataractous mother, 5 are known to be affected. Five appear to be normal, the condition of two as to cataracts being unknown, one having died in infancy, the other being married and the mother of two children—living at a distance and not readily accessible for examination.

The affected mother of this family was one of a generation of three, the other two, so far as known, being normal. The father of the mother gives a history conclusively suggesting cataracts. The line of descent is, therefore, direct or continuous through at least three generations. It is to be hoped that opportunity may sooner or later be afforded for examination of the eyes of the daughter and her two children living in Detroit, which may possibly add a fourth to the three known affected generations.

In the presenile and juvenile type of cataracts, to which class the cataracts occurring in the

family reported appear to belong, the hereditary element is more readily observed. From the study of a large number of pedigrees of families affected with such types of cataracts, there seems to be no reasonable doubt that on the whole their inheritance follows a line of descent corresponding to a Mendelian dominant, and that they are due to the presence of special factors, individuals not possessing these factors not being able to transmit them.

So it will suffice here to point out that the clinician is justified in assuming that a certain unit character occurs as a Mendelian dominant when it is transmitted according to the following rule: The inheritance will be in direct line of descent and in any given generation one-half of the children will show the defect, the other half being free or normal. The affected ones in this generation will, if they have children, have them in the proportion of one-half affected and one-half normal, while the normal individuals of any generation will have only normal children, normal grandchildren or other descendants further removed. That is to say, the character, when it once fails to appear in any member of the family tree, does not reappear in any of their descendants. In other words, an individual affected with a Mendelian dominant transmits the same to one-half his children, while any unaffected brother or sister of such an individual is incapable of transmitting the unit character and the same will not reappear in any of his descendants.

An interesting variation from the type of Mendelian inheritance, as described above, occurs in the case of the so-called sex linked diseases or abnormalities, well-known examples of which are color blindness and hemophilia, in which the unit character is transmitted typically by females, who though they do not show the defect themselves transmit the same to one-half their children. Among the daughters none will show the defect or abnormality, although one-half of the daughters will be capable of transmitting the same. Among the sons one-half will show the abnormality and will transmit it, while the other half will neither show nor transmit it.

In line with the growing conception of modern medicine that its chief function should be prevention, the study of the laws of inheritance or the science of genetics and the application of the same in the field of eugenics becomes increasingly important. While for a period of time in the future our knowledge of the subject will probably be insufficient and society unprepared for any positive action in the way of restrictive laws devoted to the field, we are even now in a position to act in an advisory capacity.

For instance, let us suppose that a member of this family or of a family affected with any of the so-called dominant characters or heredity, should ask as to the advisability of marriage from the standpoint of the probability of the affection being transmitted, would we be in a position to give such a one conclusive advice? Thanks to our knowledge of the principles of Mendel, we can confidently advise as to such conditions.

To a member of such a family contemplating marriage and not affected with the condition, who might ask for information as to the probability of his children being affected, our answer would be: "You, yourself, though belonging to an affected family, are free from the affection; your children and your children's children will be free from it, even though you should marry one of your own unaffected relatives."

To an affected member of such a family our answer would be: "You yourself are affected. If you should have a child, the chances for and against that child having the affection, are exactly even. The same will be true for each subsequent child. Should you have a large family, it is probable that about one-half will be affected. Should you marry a person affected in the same way as yourself, the probability then will be that of any children born of this marriage, three out of four will be affected, and there is the further probability that of every three such affected children, one will inherit the affection from both parents and will consequently transmit it to every child which he or she may have."

In the case of a sex-linked disease, taking for example hemophilia, our advice would be to daughters, that if they should have children, they may expect that one-half of the sons will show the defect, and while their daughters will appear normal, one-half will transmit the defect, because their germ plasm carries the taint, while the other half whose germ plasm is free, will be incapable of transmitting the defect.

To affected males of such a family, we would say that none of their children will show the defect, but that one-half of their grandsons born to their daughters will have it. To unaffected males we would say that they may expect that none of their children or descendants will show the defect.

Besides the obligation of medical men to be prepared to make such practical application of such known principles of heredity, it should be considered a duty by those favorably situated for the purpose to collect data of suitable pedigrees and to see that the same go on record or are made available for study by one of the endowed research institutions which exist for the purpose of such investigations.

INTERNAL DERANGEMENT OF THE KNEE JOINT

DR. JAMES O. WALLACE

The object of this paper is to call attention to observations made in the examinations of weak knees, and to pathology found in operating on cases of recurrent locking of the knee joint. The exciting cause is usually some form of trauma, and the conditions produced vary from a simple sprain of the internal semilunar cartilage, to rupture of the crucial ligament and fracture of the spine of the tibia. Dislocation or fracture of the internal semilunar cartilage is the most common cause of derangement of the knee joint.

Mechanism of Injury: With a knee partially flexed and the foot fixed in an everted position, there is an external rotation of the head of the tibia on the femur. This opens up the joints and allows lateral mobility. Force being applied, the internal lateral ligament carries the internal semilunar cartilage with it, and as an attempt is made to straighten the leg, the cartilage is caught by the internal condyle of the femur, rotating internally on the head of the tibia. The cartilage may slip back, or be split longitudinally or fractured. In typical cases, the symptoms and history are as follows: a sudden severe strain with knee in a flexed position, something slipping in the joint, usually severe pain, and immediate disability, the characteristic symptom being inability to extend the knee completely.

In the recurrent and atypical cases the patient has only a vague idea of the injury. He feels something slip in his joint, but there is no locking. The knee becomes distended with fluid. Examination will reveal a tender spot over the internal lateral ligament and over the anterior margin of the tibia just internal to the patellar tendon. Here there has been an injury to cartilage without displacement, or if there has been displacement it has slipped back into position. Under proper splinting and rest, this will go on to recovery without any further trouble.

The majority of these cases are not seen, and a series of slight trauma to the injured cartilage causes further effusion into the joint, with subsequent stretching of the capsule and ligaments, atrophy of the muscles, and proliferation of the scar at site of healing of the torn cartilage. There results either a lengthening of the anterior end of the cartilage which loosens its attachments, or what usually happens—a mass of fibrous tissue is formed underneath and anteriorly to the cartilage, causing it to curl up and produce locking on any slight or unusual twist.

In atypical cases with the history of a severe wrench of the knee joint followed by some effusion into the joint, the joint apparently recovers but there is always a complaint that the joint is weak. Examination will show some swelling of the joint and points of tenderness over the internal lateral ligament and over the inner anterior aspect of the joint. There will also be a slight limitation of complete extension, so slight that a casual examination will miss it. This is a very important point in the examination. The patient has had a partial locking of the knee which he has not recognized, and the knee has accommodated itself to this weakness.

In a majority of cases in which there has been a severe injury, the cartilage has not been completely restored to its normal position, or if in its normal position, a portion broken off or loosened at its anterior attachment has been thickened either by hypertrophy or by a mass of fibrous tissue caused by constant irritation during the process of repair.

A pad of fat subjected to nipping loses its vitality and becomes infiltrated with lime salts. Under these circumstances the knee accommodates itself to weakness and is in a position of slight locking and hence unstable. A slight twist causes further locking, or a recurring synovitis.

Occasionally such a knee in a quiescent state will show no limitation of extension, but after a severe test, as after a long walk over country roads, examination will show a return of swelling, limitation of extension and the loosened end of the semilunar bulging on acute flexion of the knee.

In the cases seen it has been practically impossible to differentiate between derangement caused by a loose cartilage and one caused by the nipping of a pad of fat. In some cases which have been operated, the two conditions were often present, and in two cases at least, pedunculated pads of fat were found, on operation, where a previous diagnosis of loose cartilage had been made.

Case 1, typical case of recurrent dislocation of internal semilunar cartilage: John N. F., aged 23, single, car repairman helper. Examined March 9, 1923. January 14, 1923, car coupler fell, striking him on outer side of right knee cap. Knocked knee inward with foot twisted. Knee cap dislocated inward. Patient says knee was flexed and as he made an effort to straighten it, felt something snap and leg straightened. Had application of iodine and bandage. Next day leg began to swell. Remained swollen and painful. Used crutches for a week. Went to a private hospital and had epsom salts wet dressing for a week and a half. Went home, felt fine. The following day in getting out of bed, knee again locked, pushed it and felt something slip. Then had violet ray treatment. Knee has locked several times since.

Examination showed right knee swollen both above, below, and on both sides of patella. Limitation of complete extension. Flexion is good, but complains of

pain over internal semilunar cartilage when moved. Tender over anterior end of internal semilunar cartilage. X-ray negative. Diagnosis: dislocation and tear of internal semilunar cartilage.

March 28th, operation under gas anesthesia—straight incision, internal and parallel to patellar tendon, extending to below margin of tibia. Internal semilunar cartilage torn and dislocated anteriorly lying in front of joint. The rupture was at the internal border of cartilage at its insertion into the capsule at the internal lateral ligament. There was a mass of fibrous tissue which was richly injected. The synovial fringe and fat was injected and edematous. There was a panus growing down over the internal condyle. About an ounce of straw-colored fluid escaped on opening of capsule.

Case 2, atypical recurrent dislocation of joint: Miss E. S. referred by her brother, Dr. S. Examined March 9, 1922. Ten years ago, while in surf at Atlantic City, had left knee twisted. It became very much swollen and painful and she was in bed for two days. Around 1st of December, 1921, left knee began to pain and swell. Improved after two weeks. Two weeks before examination, knee became worse, was swollen and there was difficulty in walking. Examination showed a tender area over the internal semilunar cartilage and a moderate degree of limitation of extension. There were no other symptoms or physical signs. A diagnosis was made of dislocation and tear of internal semilunar cartilage, and an operation was advised in spite of lack of other physical signs.

Operation was performed March 29, 1922, under gas anesthesia; straight incision. Panus was found growing over inner condyle of femur. There was a large tab of injected fat with one end loose in the joint. The internal semilunar cartilage was much frayed and loose on its anterior margin. The panus was removed, as was the tab of fat, and the internal semilunar cartilage. A large compression bandage was applied. She went home and in four weeks from time of operation she wrote: "I am very much delighted that I can walk around without any pain or limping."

Case 3, nipping of a tab of fat, which simulated dislocation of external semilunar cartilage: Wm. B., aged 20 years, Mercy Hospital, January 14, 1922. Night before was playing basket ball. While in the air jumping for the ball, felt his left knee lock and he came down on other leg. Knee was very painful and swollen and he was unable to straighten it. On examination, left knee was locked in about 45 degrees of flexion and was so painful that he would not permit it to be moved. The knee was prepared for operation, and on January 16, 1922, under gas anesthesia, a reduction was attempted. On manipulation of knee a mass about the size of a small chestnut protruded from the anterior aspect of the joint just internal to the external lateral ligament. This mass was hard and crepitated. It disappeared under direct pressure. An incision was made just internal to the external lateral ligament, and when the capsule was opened, there was an outpouring of straw-colored fluid, and a mass of very dark almost macerated fat was extruded from the joint. This mass had been pinched and became devitalized. It was removed, along with a large piece of fat at its base. The external semilunar cartilage was intact and not touched. He made an uneventful recovery. The diagnosis before the operation had been a ruptured and torn external semilunar cartilage.

Case 4, recurrent dislocation in which symptoms were not always present: M. S. P. B., aged 33. Seen July 27, 1922. History: Two months ago took an automobile trip and after returning felt stiff and sore all over. Symptoms all disappeared except right knee. Now complains of pain and stiffness on arising and using it. First few steps are painful, also painful if he flexes knee beyond right angle. This knee was injured on several occasions—first time 20 years ago while riding a bicycle, also hurt in football.

Examination: No swelling or redness of knee. Tender spot on the internal condyle of femur. No tenderness over semilunar cartilage. No loss of extension. Strapped, and also shoes raised on inside. Was not seen for five months. Same treatment was continued. Strapping for two months. Patient said that after usual walking or playing 18 holes of golf his knee swelled up and got stiff. On April 4, 1923, he appeared after a long walking trip. Examination showed right knee swollen. Could not extend leg. Cartilage could be palpated on inner anterior aspect of joint on flexing knee. Diagnosis: Dislocation of internal semilunar cartilage. Operation was advised.

Apirl 9, 1923, under gas anesthesia, straight incision. There was a large pad of fat outside of capsule. On opening capsule there was a gush of straw-colored fluid. The cartilage was lying loose in joint and there was a large panus growing down over internal condyle, with erosion of the cartilage of condyle near the attachment of the internal lateral ligament. The infrapatellar fat was hypertrophied and injected. The cartilage and infrapatellar fat were removed.

CONCLUSIONS

Many patients have knee joints which have accommodated themselves to weakness and are in a position of slight locking all the time, as evidenced by a lack of complete extension.

Proper splinting and rest until healing takes place is absolutely necessary in all joint injuries.

Repeated locking and trauma to a joint are always followed by pathology.

Lack of complete extension of knee is the most important sign in internal derangement of knee joint.

Careful and sometimes repeated examinations are necessary in making a diagnosis of internal derangement of knee joints.

Frederick B. Utley, M.D., Secretary.

HERPES ZOSTER

ACUTE POSTERIOR GANGLIONITIS

DR. NELSON H. CLARK

Definition: Herpes zoster is an acute inflammatory disease, characterized by soreness, burning, neuralgic pain, one or all, along certain cutaneous nerves usually followed by the appearance of groups of vesicles along same nerves.

Symptoms: In many cases, perhaps the greatest number, a slight burning and itching may be all that is noticed in addition to the rash. In others, sharp neuralgic pain may occur. The sensory disturbances may precede the eruption or occur synchronously with it. The usual interval between the beginning of sensory symptoms

and the appearances of the skin lesions is 24 to 48 hours. However, a much longer time may elapse.

The eruption begins as one or more reddish patches. Later, small papules appear on the red area. These in turn develop into vesicles. New areas may continue to appear from two to three days, sometimes longer. The vesicles are fully formed within two days. They do not spontaneously rupture, but dry and form crusts which fall off, leaving a red but unscarred surface. There are exceptions to this. Scarring may be marked, as in one case to be reported. The fluid in the vesicles is clear at first, later becoming yellow, and at times is hemorrhagic. The eruption is almost always unilateral. When bilateral, it is usually on the same level.

Fever, chilliness and malaise may be present. The neighboring lymphatic glands are consistently enlarged.

Etiology: Zoster is, in almost all cases, an acute infectious disease. In support of this are: (1) Fever, malaise, chilliness, glandular enlargement; (2) the localization of the lesion; (3) epidemics; (4) conferring of immunity.

Pathology: In all cases which have been examined at autopsy, there has been found an acute inflammation of the ganglion, with blood, destruction of the cells and fibers, and inflammation of the nerve sheath.

Complications: The eruption may become gangrenous and abscesses may form. Meningitis and septicemia have been noted in herpes involving the eye. Motor disturbances may occur; for example, paralysis and atrophy, hemiplegia, or paralysis of the bladder.

When the rash is well developed, the diagnosis is easy. Before the appearance of the eruption, with only sensory disturbances present, the physician is hopelessly lost. He then makes an anatomical diagnosis, depending on the location of the discomfort, which gives neuritis, migrane, pleurisy, intercostal neuralgia, gall-bladder and renal colic, appendicitis and sciatica.

CASE REPORTS

(1) *Simulating Renal Colic:* Mrs. C., 65 years old, was suddenly awaked by a sharp pain in region of left kidney, radiating toward the groin. Renal colic was suspected. Urine examination negative. Seven days later the rash appeared. Only one characteristic spot was noted. Pain was severe enough to require morphine, and continued in great severity for two months, with occasional attacks for a year.

(2) *Obscure Abdominal Pain—Hemorrhagic Herpes:* Mrs. H., 50 years old, under a neurologist for years for nervousness. For several days had had sharp pain in left upper quadrant. When I saw her, the pain was severe, there was slight nausea, a temperature of 99, tenderness of abdomen, but whether deep or superficial I could not determine. White blood count normal. Two days later the herpes appeared. These became hemorrhagic and the fever rose to 101, and remained between 99 and 100 for over a week.

(3) *Marked Nerve Disturbance:* W. W. P., aged 62 years, came to the office October 18, 1921. Was perfectly well until seven or eight weeks ago, when his right leg became sensitive to pressure, later there was pain in the thigh. This was followed by a rash, vesicular in type, along inner side of thigh. Since then there has been more or less weakness of the leg. Three weeks ago, knee gave way and from that time on could scarcely walk. P. E.: Weight 164 (180 two months ago), reddish areas along inner side of right thigh. No atrophy of right leg by measurement, but muscles flabby. Slight anesthesia over inner surface of right thigh. Apparently unimpaired strength in foot and leg on extension. Difficulty in raising leg at hip. K. J. and ankle jerk absent on right, normal on left. No Babinsky or Kernig. Rectal examination negative. Blood and urine negative.

Patient did not return until March 7, 1922. Pain more severe. Great difficulty in walking. Weight 145. Atrophy of thigh and leg.

With the idea that the first diagnosis was wrong, he was sent for an x-ray examination of spine. The report was a rather extensive osteo-arthritis of the lumbar spine, the change being most marked in the region of the lumbar joints.

He was sent to an orthopedic surgeon who said that he did not believe the condition of the spine could cause the condition of the leg and would not recommend supporting appliances. He was then referred to a neurologist. On March 24, 1923, Mr. P. was seen with an acute gall-bladder attack. He weighed over 170 pounds. He walked with a cane on account of weakness of right leg, but was free of pain. K. J. and ankle jerks were absent. It is believed that the original diagnosis of herpes zoster was correct.

PRIMARY CARCINOMA OF APPENDIX

DR. C. O. ANDERSON

Primary carcinoma of appendix has been considered a very rare condition. Since the routine removal of the appendix in abdominal operations and the routine examination of the same, observed cases of carcinoma of the appendix have been more frequent. Most of the cases observed have been accidental findings. Some cases, however, were operated for appendiceal symptoms. Some of the interesting questions which arise in connection with this condition are the following:

(1) What degree of malignancy does carcinoma of the appendix possess?

(2) Frequency of this condition?

(3) What are the symptoms which aid the diagnosis of carcinoma of appendix, and which differentiate from other conditions?

CASE REPORT

Patient, F. McM., was admitted to the West Penn Hospital on September 3, 1922, with the chief complaints of: (1) Pain in right lower quadrant of abdomen, and (2) tenderness on deep palpation.

Present Illness: For the last few weeks patient had attacks of indigestion quite frequently. Had colicky

pains which radiated down to the right side. During such attacks he vomited. Medical treatment would relieve his pain but would leave a tender region about the appendix, which lasted for two or three days. The pain was usually localized about McBurney's point. There was definite localized tenderness over McBurney's point on deep pressure.. Patient's temperature and pulse normal. Leucocyte count normal. Clinical diagnosis of subacute appendicitis was made.

Pathological Report: Appendix was 12 cm. in length. It had a somewhat irregular diameter, averaging ½ cm. Its serosa was congested. On opening, a great deal of hemorrhagic feces was found. The wall was edematous, mucosa was smooth, covered with numerous pin point hemorrhages. There was, however, a small nodule averaging 3 mm. in diameter which was rather friable.

Microscopical section showed a surprising picture. Large epithelial alveoli were scattered throughout the wall. The invasion of the epithelium could be followed on the surface. The cells were cuboidal, irregular in size; quite a few mitotic figures were also seen. The stroma was quite dense and contained lymphocytic reactions. The aveoli contained newly formed glands scattered here and there.

A. D.: Adenocarcinoma of appendix.

The largest number of appendices carefully studied is reported from the Mayo Clinic. In 1911, in a series of 5,000 specimens, MacCarty found 22 carcinomatous, giving a percentage of 0.44, which is unquestionably a very high percentage. None of these 22 cases suggested carcinoma. Nine of the cases had symptoms of acute appendicitis, and some of these suggested abscess, which later proved to be tumors. In 17 cases not even the gross examination suggested a growth, the serosa of the appendix not being involved. Microscopical examination usually showed unsuspected results. In a later series they found eighteen (0.6 per cent) of 3,039 specimens to be carcinomatous. In 59 per cent of 71 cases reviewed by McWilliams, the carcinoma occurred at or near the tip, and in 33 per cent no tumor was visible to the naked eye. In 23 of 42 cases, or 55 per cent, one or more solid tumors were visible.

The youngest carcinoma of appendix was found at the Mayo Clinic in a girl of five years, with symptoms of acute appendicitis. The oldest, reported from the same place, was 80 years, which was an accidental finding in an autopsy, although most cases of intestinal cancer occurred in the sixth decade.

Most of these cases have a history of chronic appendicitis. According to Landau, about 50 per cent have symptoms referred to the appendix. The rest were accidental findings without any symptoms. When there are appendiceal symptoms at hand, tuberculosis has to be considered. Swelling of the appendix would naturally suggest abscess. This has, however, a rather rapid formation.

Pathology: Grossly, it is not very often that we find a large tumor mass, and as mentioned in 80 per cent of the cases reported by Mattakanski there was no gross suggestion of a tumor. Metastatic formation is still very rare; none in the 22 cases of Mattakanski were spread to any other portion of the body.

Microscopically it shows the malignant epithelial growth beyond a doubt. The usual form of it is an alveolar growth, with some suggestion of the adematous. In some cases, colloid cancer has also been observed by Elting.

Etiology: It is very striking to notice that cases of primary carcinoma of appendix present mostly symptoms of chronic appendicitis. The fact is that the appendix in all these cases showed fibrosis, the chronic inflammatory process. In most cases the chronic appendicitis has been a forerunner of the cancer. Chronic appendicitis has been considered as a precancerous condition for a long time. Letulle described the relation between chronic appendicitis and cancerous transformation as early as 1900.

HEREDITY AND INTELLIGENCE

DR. E. E. MAYER

Intelligence is composite of innate and acquired factors. The tests used by psychologists in the Army were questions largely intended to search out the experiences of individuals, and cannot be considered to give us a positive answer as to the intelligence of those examined. Admitting that they furnish data concerning experiences and give us a relative index of the percentile differences in this respect, does not enable us to draw conclusions in respect to race. Hereditary variability governing the brain must be conceded, but it cannot be determined by intelligence tests alone.

Inbreeding and disease produces changes in mental endowment just as they do in physical heredity. The Southern "cracker" is an example of this and an evidence of the poor logic in asserting that the Anglo-Saxon stock (implying *all* of that stock) are superior to other people. The large amount of mental deficiency in Vermont points to the same conclusion.

Dr. O. Pine queries: Does your society honor the wisest, the ablest, the most unselfish of its membership in the bestowal of its most important positions, or does it usually select the popular favorite of the moment? In other words, is it a devotee of "popularity, the basest coin that circulates amongst us," in the language of Montaigne? Or does it bequeath its kingdom Alexander-like, "to the worthiest among you"?

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EDITORIALS

PHYSICAL EXAMINATION OF THE HEALTHY

On Thursday, June 21st, Dr. Charles H. Miner, Commissioner of Health, called a conference in Harrisburg of many agencies concerned directly and indirectly in public betterment for the purpose of discussing the advisability of inaugurating and pushing a campaign for the examination by competent medical men of those citizens of the state, and of all ages, who because of apparently perfect health are not under the supervision of a medical man. This suggestion of frequent examinations of apparently healthy individuals has been made by the American Medical Association, by various health organizations and thousands of individuals who have believed that in it lay the answer to most of our ills. It has come up for consideration again at this particular time because of a communication from the National Health Council addressed to Dr. Miner, requesting him to take all means in his power to insure that every citizen of Pennsylvania is examined every year on his birthday and that a campaign with this end in view be started on the 4th of July. With their characteristic liberality regarding both ideas and material, the National Health Council offers as their contribution to supply, presumably at or near cost, pictures and posters.

In the largely attended conference an Executive Committee was appointed, which formulated the following line of action:

That a plan of individual examination setting forth the minimum requirements be prepared and acted upon within a week.

That the Committee recommend the annual examination of all infants; of all adults about or past middle age; and of all others every five years.

That the publicity campaign be opened on or about July 10th and that the birthday of the individual be suggested as the specific date for the examination.

That for the betterment of public health, all physicians be asked to notify their patients that preventive medical examination is desirable, and to make appointments for such examinations. And that physicians be requested to make bulk reports as to the number of health examinations by month in the regular meeting of their County Medical Societies, and that the Secretary of each County Medical Society be requested to forward bulk reports of county examinations to this committee.

A medical examination calls for time, effort and money. There must be a compensating return in the majority of cases to make it widely acceptable. An annual examination is not called for in most people. It is perhaps most serviceable during infancy. It is already provided for in childhood and adolescence.

As a method of celebrating a birthday it would not seem to make its large appeal; nonetheless the fixing of a certain day has its distinct value and this suggestion is one worthy of careful consideration. The examination of a well person should be not for the purpose of detecting a disease, but for the assurance that he is well. This is most rational, and probably of far more value than the news that he has a lesion which will shorten his life or lessen his efficiency.

The examination involving large numbers, should be simply an indication of, first and preferably, health and a period of surcease from the doctors in the absence of acute infection, or a beginning weakness, with indications for more minute examination to detect its site, its nature and its promise, from which should be deduced the means of combating it. There must be laid down in any condition the fundamental technic of the first broad examination, and this the Executive Committee propose shall be done. It is also essential that physicians must know how to

make these examinations and how to infer from their findings the needs of the individual. It is still more needful that the physician shall not look upon this project as a passing fancy, shall not ask the patient, "Why do you, a perfectly well man, or woman, come to me?" and dismiss the whole subject as one of little import.

In making examinations of the well it is needful that the well people should want to be examined and that the physicians should be willing to examine them adequately. The means of reaching the people is through their physicians, nor is there the slightest impropriety, indeed it is highly desirable that each physician in the state, after a careful investigation and assurance of competency to make such an investigation, communicate with every one of his patients whom he has not seen for a long period, call his or her attention to the desirability of these examinations and suggest a definite time when such can be made. Having made one examination, a date should be placed for the next one, since these examinations require time and often more skill than is applied to the diagnosis of established lesions, nor should the physician be without his just monetary return.

By habit and imitation these examinations among the well-to-do are becoming more and more frequent. They are now rarely foregone in the case of a baby. The successful man of middle age habitually goes to his doctor just so often to be gone over, much as he goes to his dentist, though not so frequently, unless the doctor so directs. The youth and robust man goes to the doctor never, unless driven by his wife or mother, and then reluctantly and because of an acute affection. Perhaps he may be induced to be more wise if the public schools promulgate, as they propose doing, an adequate health education, and if during this period of adolescence the habit of frequent examinations is formed.

Industries commonly require an entrance examination. They are loth to call for aught else, relying upon those in their employ to seek aid for disability, after being forced to secure it when the inaptitude for the performance of duties is detected. That universal and frequently repeated medical examinations will largely affect statistics is scarcely to be hoped. That they will add to the sum of human happiness by accentuating the importance of human health can be depended upon absolutely. Their acceptance at the hands of the laity depends at the present and in the main on the belief of the doctors in their value and their ability to make them worth while.

Perhaps the most important initial step in this whole campaign is the establishment of standards of physical examination and standards of interpretation. This the Executive Committee is endeavoring to accomplish. Interpretation is perhaps especially difficult since it is well known that albuminuria in itself is likely to be no indication of disease, or even the beginning of a disease, that a systolic murmur is compatible with a perfectly healthy heart and that high blood pressure during the stress of an examination may be misleading. Edward Martin.

RECONSTRUCTION AND REHABILITATION IN CIVIL LIFE

What are we doctors going to do to restore to normal and army fitness standard, the large number of citizens who are not up to anything like the high standard of industrial efficiency they should be because they suffer from many diseases which are curable, and must be cured, not only for humanitarian reasons but for economic ones?

A majority of the defects which shut out a man from being a soldier are curable. It is true, campaigns of education by the profession and individuals have been carried out for particular diseases and in isolated districts. Cancer, tuberculosis, social and occupational diseases, have been exploited in medical magazines; but such minor diseases, so easily cured or corrected, as caused exemptions in the first draft were not even suspected or regarded as of much importance.

To show how neglectful we have been in endeavoring to cure or benefit those so afflicted, do you realize that 25 per cent of the doctors who applied for commissions in the Medical Reserve Corps were rejected because they were physically unfit?

The causes for rejection were defective vision, defective hearing, bad teeth, flat feet, varicose veins and hernia, while some of our brothers were suffering from tuberculosis, chronic appendicitis, persistent albuminuria and tumors. What of chronic appendicitis in four doctors out of forty-two rejected? What of seven out of forty-two rejected with bad teeth and gums? And fourteen with defective vision and six with cardiac derangement, in only two instances organic?

Certainly such figures should teach us physicians that in the matter of reconstruction and rehabilitation, we can get plenty of practice by beginning at home. Our first duty is to guard zealously and persistently the health of our own bodies.

Would we have much confidence in our banker if he urged conservative investments and then

bought gold bricks with our hard-earned and hard-collected savings? Would we expect our parson to preach against dishonesty and then commit forgery in our name?

The national movement to-day towards physical fitness is a tremendous constructive force. The man whose muscles have not grown firmer, his waist smaller, his body more erect and stronger, was either in prefect health at the beginning of the war, or he did not live up to his responsibility in helping win the war. Mental, moral and physical fitness is the watchword in the ranks of the soldier. So it must be in the ranks of the workers, for while war requires a body of trained strong men in the field, it also requires a greater army of physically fit workers for industrial service at home. This physical fitness can be kept up to its highest efficiency only by the skill and care and constant supervision of medical advisers.

We, who, in a measure, have charge of the public health would feel the responsibility of raising to greater efficiency our own bodies and those of our patients, who could so easily be placed on a higher plane of business and industrial activity by applying the principals of reconstruction and rehabilitation, and thus live up to our obligation. J. B. McA.

EDITORIAL COÖPERATION vs. EDITORIAL ISOLATION

About a year ago the Louisiana State Medical Society purchased the *New Orleans Medical and Surgical Journal* for the official publication of the Society, and are now passing through the period of transformation. Instead of blindly "going it alone" the Society wisely adopted the policy of finding out how others do it, and has sent out a questionnaire to a number of the other journals of the country, requesting information on matters of organization, management, editorial and executive staffs, etc.

This is surely a commendable procedure and will doubtless meet with a ready response by the journals of which the information was asked. Moreover, it is one of the many signs that the medical journals of the country realize that they can make substantial progress only by standing together. We welcome each of these signs, for it has long been our opinion that a closer relationship should exist between the editors, more particularly of the many state journals which are published at the present time. These journals can in no way be considered competitors; each is an integral part of a potentially powerful whole. But so long as the left hand and the right do not know the activities, each of the other, how can they be expected to coördinate their efforts to exert the wide and far-reaching influence of which they as a whole are capable?

We feel that it would be eminently fitting for the American Medical Association to assist the state publications by asking the editors of the state journals to meet in Chicago at the time that the State Secretaries' Conference is held. At such an Editors' Conference it would be possible to compare notes and to obtain the constructive criticism of one another, discussing and adopting general policies which would aid in producing better journals for the members of the medical profession in each state.

The Atlantic Medical Journal would suggest that the editors and officers of the state medical journals consider this problem, with the end in view of working out some plan, prior to the next meeting of the State Secretaries, by which a State Medical Editors' Association may be formed. We believe better results would ensue from such coöperation than from a continuation of our present policy of isolation, and the Atlantic holds itself ready to assist in any way possible in the furtherance of this proposition.

OLD AGE

Volumes have been written on the subject of the care of the child, and advice has been freely given as to the preservation of manhood and womanhood. It would seem that our efforts thus far have been so wholly centered around the new life, its future, its preservation for material and spiritual gain, that we have overlooked the further preservation of that individual as represented in the life of declining years. We are inclined to regard him as a human mechanism, having served his day, who now patiently awaits, amidst caresses, love and sympathy, the final call of Jehovah.

Those who are interested in American literature dealing with geriatrics will find a number of general articles on various senile conditions, but very few texts dealing with the subject as a whole. The work of Nascher, with an introduction by Jacobi, represents one of the most comprehensive works of this kind. According to Jacobi, the other countries have not given much consideration to this subject. Germany, however, takes the lead in its contributions. It would seem, therefore, that the study of old age with its many possibilities offers a hopeful field for study and investigation.

The most hopeful results offered by further investigation and study of old age would be a general preservation of the physical and mental

health, whereby the aged individual would be able to enjoy, free from undue hardships, pain and oppression, the declining years of his life. No one anticipates any great results from the standpoint of rejuvenation, for history in its repetition does not apply to the longevity of life and the Methuselahs of the former epochs of the world have not reappeared in the cycle of time. It is safe to assume that despite the advocates of Coué ism, spiritual seances, monkey gland transplantation, rejuvenating tonics or the charming touch of mystic cult, we cannot prevent the inevitable. We can, however, possibly delay the progressive deterioration by protecting the human mechanism in so far as possible from certain diseases and by relieving the still active cells from undue strain and stress which comes from physical and mental labor as a result of undue anxiety from environmental, social and economic sources of unhygienic living.

Those who are familiar with the need can readily appreciate the cell changes which are responsible for this condition and the subsequent anatomical and physiological disorders. Furthermore, they can appreciate the psychology of the aged, the prominence of the ego, the strong desire for self-preservation and the fear of physical handicap and permanent incumbrance upon their families or the community. They also will appreciate that the situation does not appear as hopeless as it seems, for physical hygiene offers a great deal for the preservation of the physical body, while mental hygiene offers equally as much in the preservation of the mental faculties.

In other words, rest, fresh air, feeding, physical exercise, occupations and diversion, productive or nonproductive, consisting of reading, conversation, light work, music, games or any other form of something to do will prove very beneficial. J. A. J.

THE PROBLEM OF EPILEPSY

Assuredly one of the disappointing things in modern medicine has been the utter failure to advance our knowledge of the causes of epilepsy and allied convulsive states. During the Christmas holidays the Association for Research in Nervous and Mental Diseases devoted two entire days to various phases of the problem, and one must acknowledge that little of real value came out of the meeting. One noteworthy fact, however, was emphasized by several investigators who approached the problem from the experimental side, and that was the great amount of useless, untrustworthy and contradictory information that has crept into the literature today. The acknowledgement, therefore, that an absolutely fresh start must be made is something of real value, after all.

Much work of promise is being done in the study of the convulsions of uremic and eclampic states, and the probable solution is bound to shed some light on the so-called epileptic group proper. Animal experimentation, especially with the use of absinthe as the exciting agent, offers a hopeful method of studying the mechanism of the fit—not only as regards the level of motor discharge, but also as regards the effect of experimental endocrine disturbance and drug therapy.

Until some definite contribution is made, however, the physician can discharge his duty to the patient in the so-called idiopathic group only by a judicious and detailed symptomatic treatment, in which diet, regulation of the gastro-intestinal tract and the use of bromides or luminal in adequate dosage, give on the average, reasonably good results. G. J. W.

THE NASOPHARYNX AS A FOCUS OF INFECTION

It has been definitely established that arthritis, various rheumatic conditions, neuritis, endocarditis and other inflammations may result from various localized foci of infection, such as pyorrhea alveolaris, tooth abscess, carious teeth, infected tonsils, inflammation of the air-sinuses, mastoiditis, chronic appendicitis, cholecystitis and so on.

The removal of abscessed teeth has frequently been attended with prompt recovery from some long-standing metastatic general condition resultant upon such local infection, or—the more scientific procedure—the proper treatment of pyorrhea or apical abscesses, when carried out intelligently by a capable dental surgeon, has given equally good results without the loss of the teeth. Similar results have been brought about by the removal of tonsils or adenoids, and by prolonged treatment of chronic sinus involvement.

There are, however, cases of so-called rheumatism, neuritis, or arthritis, some with associated endocarditis, in which no primary focus of infection can be demonstrated, the teeth having been extracted, or upon numerous thorough examinations pronounced in perfect condition, and no evidence of infection found in any other locality. In such cases as these, if the attention is directed to the nasopharynx the etiological factor of the disorder may in some instances be discovered.

It was conclusively demonstrated in our army camps that many individuals harbor meningococci in the nasopharynx, although such indi-

viduals may not have suffered from the disease; and it was therefore a routine procedure, when meningitis occurred, to examine an entire company or even a regiment for the purpose of discovering meningococcus carriers. This was accomplished by taking cultures from the nasopharynx with a West tube and inoculating suitable media.

In carrying on this work it was observed that many of the men harbored in the nasopharynx, the hemolytic streptococcus or the streptococcus viridans, and that many of these hosts suffered from rheumatoid and allied conditions.

With this in view some investigations have been carried on upon individuals suffering from rheumatic conditions, myalgia, neuralgia, neuritis, endocarditis, etc., in whom no localized focus of infection could be demonstrated. It was found that in a number of such cases a pure culture, the hemolytic streptococcus or streptococcus viridans, was obtained from the nasopharynx.

The culture is taken by the use of the West tube, which, it is almost necessary to state, is a long glass tube curved at a right angle near one end and containing a cotton swab on a wire. The curved end of the tube is passed up back of the uvula and the swab pushed out a distance of half an inch or a little more, passed several times over the posterior wall of the nasopharynx and withdrawn. It is then streaked over the surface of the culture medium (5 to 10% human blood agar-agar) in a Petri dish which is incubated 24 hours.

The hemolytic streptococcus grows as a very small colony with a clear or transparent area about it, caused by the action of the organism in dissolving the blood. When present, this organism is generally so abundant that the path of the swab is seen as a transparent streak across the blood agar.

The streptococcus viridans grows as a small colony about which is a green area—the hemoglobin having been converted into methemoglobin—and with this organism the path of the swab is frequently seen as a pale green streak.

The treatment of the condition should properly be carried out by the nose and throat specialist, who uses argyrol tampons in the nose and applies his antiseptics to the nasopharynx through the mouth. After a week or two of such treatment he finds the patient greatly improved, but the result of the culture taken at this time, to his great surprise, is frequently found to be the same as when first taken, and sooner or later he learns that it is a long, hard struggle to rid the nasopharynx of either of these streptococci. One might suggest the employment of dichloramin T, as used in the case of the meningococcus carriers.

The administration of a vaccine made from the organisms recovered, in conjunction with the local treatment, gives promise of the best results.

G. R. M.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

LIFE INSURANCE EXAMINATIONS

In the year 1921, two hundred ninety-two life insurance companies disbursed fees for medical examinations totaling approximately $10,000,000.00. Assuming that twenty-five thousand doctors of medicine in the United States made such examinations during 1921, the average amount of money distributed as fees for life insurance examinations for the year would be $400.00 to each of the twenty-five thousand physicians. These figures are mentioned to fix in the minds of our readers the thought that fees for life insurance examinations form no inconsiderable proportion of the income of many practicing physicians.

Needless to state, many physicians who seek and receive appointment as medical examiner for life insurance companies are in time disappointed in the income derived therefrom. This disappointment is often based on the finding by the interested life insurance company that certain medical examiners have no greater interest in the company than the first formal examination of an applicant for insurance and the subsequent collection of the examination fee. Medical examiners who have proper appreciation of the importance of thorough examinations, who spare no efforts to ascertain and fully develop the exact facts in each case, keeping in mind that they are employed by the insurance company for this service and not by the applicant, will soon become known to all insurance companies as dependable examiners. Examiners who are found to be unreliable are through the united efforts of the insurance companies soon so catalogued by all companies.

The selling of life insurance, like all thoroughly standardized vocations, is a highly competitive business, and for this reason requires often on the part of the medical examiner a certain degree of interested coöperation in making and keeping appointments for the examination of prospective policyholders. It is true that the medical department of every life insurance company prefers that medical examinations shall be made at the office of the examiner, but business expediency often demands that such examina-

tions be made in the office, the home or the place of the prospect's employment. These demands upon the dignified routine of the older medical practitioners are often met in such a manner as to lead to the employment of a younger and less experienced medical practitioner as an alternate examiner.

Life insurance companies in choosing local examiners usually seek men who are well trained, well equipped, well established and highly connected with local institutions and medical societies. These are essential qualifications. If supplemented by the breadth of vision that sees beyond the immediate fee into the possibilities of widening acquaintanceship, not ethically obtainable by any other connection, the possession of such qualifications often leads the examiner to a larger clientele and permanent association with a dignified phase of medical practice.

Increased financial income and ethical broadening of acquaintanceship are not the only benefits derived from experience as a life insurance examiner. This class of work provides one of the few circumstances in which a physician's work is checked immediately by another medical observer. Such review naturally serves as a stimulus to the development of keener powers of observation and greater detailed care in history taking and the recording of physical findings.

Probably the greatest advantage accruing to the conscientious physician who makes a considerable number of life insurance medical examinations is the opportunity for chest examinations of presumably healthy individuals. What better training for quickly recognizing the physical signs of chest pathology could any physician have than to examine thoroughly and study a considerable number of life insurance applicants?

The medical director of a life insurance company depends upon his medical examiners as he would upon the use of his own five senses to obtain the family history, personal history and physical qualifications of a prospective policyholder. The medical examiner expresses an opinion on the longevity of an individual examined, which is based upon his own observations. The medical director, after taking into consideration, among other things, the qualifications of each examiner, bases his opinion of each risk on a study of the examiner's report in comparison with the mortality experienced in a very large number of insured lives falling within a similar average group. To the interested examiner this contact with the medical director also opens an avenue for increased knowledge of prognosis based on the director's wide statistical experience.

Many life insurance companies are making a splendid contribution to public health and sickness prevention by offering periodically, free of cost, health examinations to certain of their policyholders. This new service, while but in its infancy, already offers additional opportunity for increased earnings and impressive work by local life insurance examiners.

In the larger cities, years of experience by certain physicians as life insurance examiners has in many instances resulted in the devotion of most of their time and talent, on a fee basis, to this particular phase of medical practice. In some instances the larger companies have established in their larger agencies a full-time medical examiner on a salary basis. The opportunities for many physicians to serve as examiners will always be plentiful, however, and we commend to the younger men of the profession the development of connections with representative life insurance companies early in their professional career.

The advantages to a physician of work in the life insurance examination field may be briefly summarized as follows:

1. Fair fees promptly paid.
2. Ethical broadening of acquaintance.
3. Stimulus to accurate history writing and recording of physical findings.
4. Opportunities for examining presumably physically unimpaired persons.

Walter F. Donaldson, M.D.
Pittsburgh, Pa.

BUBBLES

A bill in time saves nine.

A dollar in bank is worth two on your books.

Education is the backbone of civilization; just now it needs its spine adjusted.

The only bad debtor is a dead debtor.

About the only kind of insurance we don't have is vacation insurance. Some enterprising company might be surprised to see how popular that would be with the hard-working doctor.

Osteopathic surgeons may be all right—if they don't cut up too much.

An efficient secretary is worth her weight in gold.

Wonder how the Doctors of Optometry will distinguish their D. O. from the one that belongs to the Doctors of Osteopathy?

It seems that Workmen's Compensation isn't going to be Doctors' Compensation yet awhile.

The longer a bill stays on your books the longer it will stay out of your pocket.

Will Insulin insulate the diabetic?

We wonder if the recent political ferment in Bulgaria might be due to the intake of too much Bacillus Bulgaricus?

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since May 21st. Figures in first column indicate county society numbers; second column, State Society numbers.

May 22	Chester	70–72	7097–7099	$15.00
25	Luzerne	230	7100	5.00
28	Tioga	28	7101	5.00
	Fayette	115–116	7102–7103	10.00
29	Beaver	63	7104	5.00
June 2	Juniata	12	7105	5.00
	Elk	22–24	7106–7108	15.00
6	Blair	86	7109	5.00
9	Northampton	135	7110	5.00
	Lackawanna	224–228	7111–7115	25.00
	Blair	87	7116	5.00
16	Lackawanna	229–232	7117–7120	20.00
	Lancaster	115–116	7121–7122	10.00
	Washington	212	7123	5.00
18	Northampton	136–137	7124–7125	10.00
	Philadelphia	1874–1924	7126–7176	255.00
	Allegheny	1223–1231	7177–7185	45.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to June 20th:

ALLEGHENY: *New Member*—A. Pauline Baker, 7725 Hamilton Ave., Pittsburgh. *Removal*—Charles W. Allen from Tarentum to Renfrew (Butler Co.); John A. Boyd from Pittsburgh to Christiana (Lancaster Co.). *Transfer*—Forrest L. Schumacher, of St. Francis Hospital, Pittsburgh (formerly of Dubois), from Jefferson County Society. *Deaths*—Charles Sohn, of Pittsburgh (Bellevue Hos. Med. Coll., N. Y., '90), May 22, aged 62; Alice M. Fasold, of Pittsburgh (Women's Med. Coll., Phila., '20), killed in automobile accident, May 31, aged 28.

ARMSTRONG: *Removal*—Arthur R. McNeil from Cadogen to Brookville (Jeff. Co.); Charles A. White from Dayton to Arcadia (Ind. Co.).

BERKS: *Death*—Fremont W. Frankhouser, of Reading (Jeff. Med. Coll., '80), May 23, aged 67.

CLEARFIELD: *Removal*—Samuel Stalberg from Boardman to 2769 Lancashire Road, Cleveland Heights, Ohio.

ELK: *New Member*—N. M. Daghir, Dagus Mines.

FAYETTE: *Reinstated Member*—Edgar K. Wells, Masontown. *Removal*—Chester B. Johnson from Mt. Braddock to Allison.

INDIANA: *Removal*—J. Huston Johnson from Waterman to E. Downingtown (Chester Co.).

LACKAWANNA: *New Members*—J. J. Carroll, 1309 Jackson St., Scranton; M. V. Sarine, Jermyn. *Reinstated Members*—John J. Loftus, Old Forge; William J. L. Davis, 814 Mulberry St., Scranton.

LANCASTER: *Deaths*—Jacob R. Lehman, of Mountville (Jeff. Med. Coll., '82), May 9, aged 68; Ambrose J. Herr, of Lancaster (Jeff. Med. Coll., '61), May 27, aged 85.

ERIE: *Expelled*—Ellen Walker-Berry, of Erie.

MERCER: *Transfer*—John M. Jamison, Grove City (formerly of Pittsburgh), from Allegheny County Society. *Resignation*—Frederick C. Potter, of Akron, Ohio, formerly of Mercer.

NORTHAMPTON: *Removal*—John A. Lentz from Northampton to 1315 Polk St., San Francisco, Calif.

PHILADELPHIA: *New Member*—Mabel H. Pearson, 6118 Germantown Ave., Philadelphia. *Death*—Francis H. Elder, of Philadelphia (Univ. of Penna., '81), May 9.

SUSQUEHANNA: *Death*—Homer B. Lathrop, of Springville (Univ. of Penna., '78), April 9, aged 67.

UNION: *Death*—William E. Metzgar, of Allenwood, April 27.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg

LEGISLATION

The session of the Legislature of 1923 has come to a close with the adjournment of House and Senate on June 14th.

From month to month we have brought to the attention of the medical profession of the state, bills which have been of importance. Now that the transactions of the Assembly have become a matter of history, a résumé of the bills introduced and their final disposition may be of interest. We, therefore, present the following:

SENATE BILLS

No. 16, an act to prevent fraud and deception in the manufacture and sale of adulterated foods, passed the Senate and House and was approved by the Governor April 26th.

No. 19, an act to prevent fraud and deception in the manufacture and sale of adulterated ice cream, passed both houses and was approved by the Governor March 20th.

No. 95, known as "the filled milk bill," passed both houses and was approved by the Governor March 21st.

No. 242, the act to regulate examination and licensure of Osteopathic surgeons and to create a board for examination and licensure of the same, was amended in the Senate, and passed that body May 16th. Certain amendments were offered by the Chairman of the Committee on Health and Sanitation of the House, which were not accepted by that Committee. The bill was passed finally by the House on June 13th, as amended in the Senate, and was approved by the Governor.

No. 515, an act to regulate and standardize clinical thermometers, passed the Senate and died in the Committee on Public Health and Sanitation of the House.

No. 554, an act regulating the practice of medicine and surgery, and giving the right to the Bureau of Medical Education and Licensure (now the Board of Medical Education and Licensure) to reinstate licenses in certain cases, is in the hands of the Governor.

No. 586, known as "The Code," changes the name of the Bureau of Medical Education and Licensure to the State Board of Medical Education and Licensure, and provides for the appointment of five members, as in the present law, and two ex-officio members, who shall be the Superintendent of Public Instruction and the Secretary of Health (now the Commissioner of Health). Under the present law, the Bureau provides a salary of $1,500.00 per year per member of the Board, except the ex-officio members, which has been changed by the Code to $15.00 per diem. An effort was made by the Chairman of the Committee on Public Health and Sanitation of the House to amend the bill, allowing the present salary feature to remain. The amendment was not accepted. The Code bill passed both houses and was signed by the Governor June 7th.

Nos. 685 and 686, relating to the Board of Examination and Registration of Graduates of Training Schools for Nurses, also the re-registration of all licensed attendants, were both signed by the Governor.

No. 762, an act to safeguard human life and health by providing for reporting and control of communicable diseases, is an amendment to the present law relating to the same, and is in the hands of the Governor.

No. 786, known as the "skimmed milk bill," which provides that no condensed skimmed milk shall be offered for sale in containers of less than five pounds, passed both houses and is in the hands of the Governor.

HOUSE BILLS

No. 36, an act to regulate the practice of Chiropractic and to provide for the appointment and maintenance of the Board of Chiropractic Examiners, was defeated on the final passage May 8th, reconsidered on May 15th, and again defeated on final passage May 22d. No further action could be taken on this bill during the session.

No. 62, the antivaccination bill, was never reported out of the Committee on Public Health and Sanitation.

No. 72, an act to establish county hospitals for the treatment of tuberculosis, was approved by the Governor April 3d.

No. 164, an act to make it unlawful to pollute the waters of the state, was not reported out of the Committee on Health and Sanitation.

No. 255, a bill which would allow the Board of Medical Education and Licensure to create a department for investigation and prosecution of illegal practitioners, was recommitted to the Committee on Public Health and Sanitation, and never reported out.

No. 248, the nonmedical technicians bill, was recommitted to the Committee on Public Health and Sanitation and no further action taken.

No. 295, an act to make a burial permit issued at the place of death, valid throughout the commonwealth, was dropped from the calendar.

No. 362, an act to authorize any school or college of optometry to confer a degree of Doctor of Optometry, was approved by the Governor April 23d.

No. 395, a bill to regulate the sale of caustic acid and caustic alkali preparations intended for household use, passed both houses and was approved by the Governor May 7th.

No. 433 was an amendment to the present law to increase the time during which unclaimed bodies are held by the authorities, from 36 to 72 hours, before sending them to the Anatomical Board. This bill passed the House but was not reported out of the Committee on Public Health and Sanitation of the Senate.

No. 846, an act to clarify the provisions of the Workmen's Compensation Act as it related to the compensation to physicians and hospitals, after being referred many times for errors in printing, and after delays in the committee to which it was referred, was finally re-reported as amended June 6th. It passed second reading June 12th, too late to be finally passed by the House and Senate, and was dropped from the calendar.

No. 998, an act to accept the provisions of the Sheppard-Towner Act of Congress, by appropriating $62,500 in order to receive a like amount from the United States Government, provides for instruction of maternity cases as to hygiene and sanitary welfare. The resolution passed by

the House of Delegates at the Scranton Session was presented to the Chairman of the Committee on Health and Sanitation of the Senate, which resolution voiced the sentiments of the medical profession of the state. Pressure by all the women's organizations of the state compelled the final passage of this bill, which was approved by the Governor May 28th.

No. 1075, known as the mental health bill. An effort was made to amend the section in relation to the examination of mental patients so that an Osteopathic practitioner would have the right to make such examination. This effort was made in both the House and Senate, but without avail.

There has not been a session since 1915, when so many bills affecting the medical profession have been presented to the House and Senate. It has been a most difficult session in which to observe legislation and effect the passage of meritorious bills or defeat those objectionable to organized medicine. In the final hours of the session much feeling has been expressed relative to medical legislation, and it is hoped that the entire profession of the state will realize the difficulties with which the Medical Legislative Conference has contended during the Session of 1923.

COMMUNICATIONS

To the Editor of The Atlantic Medical Journal, *Harrisburg, Pa.*

Dear Sir: In view of the timeliness of the subject, will you please publish the following report, read before the Philadelphia County Medical Society, June 13, 1923:

VITAL POINTS FOR THE PHYSICIAN CONCERNING THE COMPENSATION LAW*

The Workmen's Compensation Law has given rise to endless discussion of its various provisions on account of the many interests concerned. These include the labor chiefs, the employer, the employee, the physician, the hospitals and the representatives of the employer—the insurance carriers. The labor chief considers the law from the standpoint of the laboring man and makes every effort to obtain a reasonable portion of his salary after the accident period. The employer wishes the interests of the employee safeguarded so that he can be returned to his occupation in the quickest possible time. As a result of the protection of the employee demanded by law, a new interest arises—the insurance company which represents the employer. If on the other hand, the employer has no outside agency to protect him, he then becomes a self-insurer. Finally the hospital and the physician complete the chain.

There have been many accusations made against physicians, pertaining to their honesty and the honor of the profession as a whole. These imputations are much exaggerated. Thus, a statement recently made that more than one-half of the profession are padding their bills, cannot go unchallenged. The number of physicians who are supposed to transgress is about 20%. This number we are sure is still too large and could be eliminated if the names of these physicians were placed before a committee of the Board of Directors of this society. The writer has asked repeatedly for a list of the names of these transgressors, but up to the present writing has not succeeded in securing them. Admitting the charge, it does not seem a sufficient reason for the wholesale cutting of bills by insurance companies. This pernicious practice no doubt has encouraged some physicians to pad their bills. The reduction of the physician's bill is done without his consent. The only redress he has is to place his claim before the Compensation Board, which generally decides in favor of the physician, and justly so. Therefore, we would advise all physicians who have had their bills reduced to present their claims to the Compensation Board for adjustment.

The physician has been accused of incompetence in the treatment of industrial cases. We know as a fact that the utmost care is always taken of these cases. Sympathy for the injured is always shown by the surgeon. The statement has specifically been made that the small wound is the one that has given the insurance company the most concern. Curiously enough, in the writer's experience, the badly infected cases come from the large plants which usually employ a full-time physician. This is not said in a spirit of criticism, because we all know that the utmost care is taken by these physicians to prevent infection; but it must be borne in mind that there are many extraneous factors causing infection, over which we have absolutely no control.

Special reference has also been made concerning the ultimate recovery in fractures. It is impossible to obtain a 100% result in all fractures. There is no class of case in the entire category of medicine that requires more experience and greater mechanical skill to obtain a perfect result.

The question more frequently asked than any other is whether the employee can choose his own physician. According to the law he cannot without the consent of the employer or his representative, namely, the insurance company. Even if the employer prefers a certain physician, the insurance company will dictate to him the physician he shall employ. The patient's inalienable right to select his physician has been taken away by the enactment of the compensation law. Thus an additional obstacle has been placed by the insurance company to prevent the physician most interested in the patient from treating him. A letter has been sent by some insurance companies, apprising the employee of the fact that they are fully capable of treating him, and asking the patient to come to their clinic for further treatment. It cannot be questioned that there is a time when the family physician is fully able to take care of the industrial case. The same rule of ethics should obtain in an industrial case as in any ordinary accident case. There ought to be no discrimination. In case of accident not due to industry, if admitted to a hospital, the patient is always referred to his family physician. In this instance, as in many others, there seems to be a disposition on the part of the insurance companies to encourage the enmity of the profession instead of fostering their good will. It is fully understood by all that the law has favored one interest only, namely, the insurance companies. This is exemplified by the fact that from time to time they have declared large dividends. On the other hand, the companies

*The new bill and its amendments reached the calendar of the House of Representatives, but on account of the adjournment of the Legislature a vote could not be taken on this measure. We are, therefore, working under the law of 1919.

will have one believe that they are doing a charity. How can they reconcile this claim with the report of their yearly statements?

The writer has reviewed the law in other states in regard to the relation of the physicians to the compensation law. In answer to certain inquiries concerning the status of the physician in relation to industrial cases in hospitals, we received letters from New York City, Boston, Baltimore and Cleveland. In the cities mentioned, the physician is fully compensated for services rendered to these cases, and furthermore is fully protected by the boards of managers in collecting his fee, even though these cases have the status of a ward case. Some hospitals, insurance companies and others fail to realize that a new class of patients has been established; that these industrial cases are really private in character, and therefore should receive the same attention as private cases should receive. Patients who come under the Workmen's Compensation Law are not ward patients and cannot be put in the same category. The mere fact that the hospital charges for the use of the operating room, x-rays, tetanus antitoxin and other special drugs, places these cases in a special class. No such charges are made for ward cases. Pennsylvania is practically the only state in the Union having compensation laws, where the physician is not compensated for his services rendered to industrial cases which enter hospitals.

The law as framed in 1919 was perfectly clear to those who wished to understand its intent. There would have been little necessity for a change in the present law had the insurance companies abided by their agreement. The old law which prescribed a $25 and $75 limit for services performed over a period of two weeks was found inadequate and the act under which we are now working was framed. This allows $100 for hospital services and supplies, and if interpreted correctly, an additional $100 for the services of the physician or surgeon for a period of thirty days. It was never intended by those in conference when the law was framed that the doctor should not be paid.

The Committee of the Philadelphia County Society on Workmen's Compensation has given this subject considerable thought. It has endeavored to arouse the profession of Philadelphia and every county in the state to a realization of the importance of legislation favorable to the physician. A petition was first circulated to be signed by the members of the various societies which meet in this city. This was found inadequate on account of the comparatively small attendance at these meetings. The petition was followed by a letter with an enclosed postal card petitioning the legislature to pass laws which would protect the physician. The efficacy of this method was confirmed by the fact that over 1,500 cards were received by our executive secretary. These were then sent to Harrisburg to be presented to the Committee on Insurance of the House of Representatives. This propaganda was transmitted to every secretary of the county societies in the state. The response was universal. The component societies immediately signified their willingness to help. Not satisfied with these expressions of support, two more letters were despatched to remind the secretaries of the county societies that the cause had not yet been won, but that the senators and representatives must be interviewed to give their support to our cause. Again, a fortnight ago, when the bill with its amendments seemed to be in a precarious position, another letter was despatched from our office apprising the various secretaries of the conditions confronting us and urging them to do their utmost in order that we might win the members of the Legislature to our cause.

In addition to this correspondence the committee, in conjunction with some of the members of the Medical Legislative Conference, journeyed to Harrisburg to protect our interests. The original bill, as presented to the legislature, was objected to by the so-called self insurers because no time limit was placed on the length of disability or the amount to be charged. Our committee felt that objections would be filed to the bill as drawn; it was difficult to conceive how it ever reached the third reading in the House. Curiously enough the general insurance companies filed no objections, but a new factor entered the field—the self insurers. These comprise organizations of the P. R. T., P. R. R., U. G. I., and the Atlantic Refining Company. They asked for a hearing before the committee of the House. This was granted. Arguments were heard from both sides, but no agreement could be reached. A few days later a conference was held with the representatives of the self insurers. The spokesman for the self insurers agreed to several amendments which allowed the doctor and the hospital each to receive $100 for their services, board and supplies; also that the doctor should be a "party in interest," which means that he would have a right to bring suit. Finally a subcommittee of the House was appointed to meet our committee and that of the self insurers. We again journeyed to Harrisburg. At this conference the representatives of the self insurers would not agree to any of the amendments except the one referring to the physician being a party in interest. Not being able to come to an agreement, we decided to allow the original bill with the amendments to be brought out of the committee for a final vote.

The experience derived from this committee work illustrates the fact that there must be a united profession if we wish to seek legislation favorable to our cause. This work ought not to be put on the shoulders of a few, as suggested by Dr. A. C. Wood, one of our committee, there ought to be established a central bureau with branches all over the state, the business of these branches being the placing of the problems pertaining to compensation work before the central bureau.

Senator Copeland of New York, speaking before the Medical Club about two weeks ago, stole some of my thunder. With the Senator, I hold the same views concerning the election to office of more physicians. It is another solution of the problems that confront the physicians of this state. A survey of the doctors throughout the state should be taken to determine who of these would be willing to serve in either branch of the legislature. In the words of Senator Copeland, it is neither "grotesque" nor is it "incongruous" for a physician to hold office. My feeling is that in the future physicians will seek these positions of honor.

The other alternative would be to prevent the reëlection of members who persistently oppose measures in which physicians are interested.

In conclusion, the writer feels that he cannot better emphasize the points of the preceding paragraphs than by referring to an article of Dr. Louis D. Wilson, which appeared in the *Literary Digest* for May 26, 1923. In it he says, "Rarely do physicians of sound judgment seek election to state legislatures. Or if they do it is a half-hearted manner and without adequate support from the other members of their own profession. As a result we have the spectacle yearly of state legislatures perpetrating the most assinine legislation in relation to health, to medical licensure and to education. In the meantime the legislative committees of state medical societies in their reports

annually deplore the legislative actions taken and express futile hopes for improvement in the future. The way for physicians to get for the community sane health, licensure and educational legislation is to take a hand directly in its making."

Moses Behrend, M.D., Chairman,
Committee on Workmen's Compensation,
Philadelphia County Medical Society.

THE PRESENT STATUS OF ENDOCRINE THERAPY

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: In his interesting article on the above subject in the June number of The Atlantic Medical Journal, Dr. B. A. Cohoe writes as follows: "We find the physiologists at odds among themselves with respect to the various hypotheses promulgated, and as a class, at times, pitted against the clinicians whom they accuse, frequently with right, of imaginative speculations and audacious therapeutic procedures. This state of affairs is due to the fact that no fixed principles have as yet been established concerning the physiology of the endocrine glands, and that almost any statement made to-day regarding their function may to-morrow require qualification."

Permit me to recall in this connection another paper published last year in the *Lancet* of August 12, 1922, in which the prevailing knowledge concerning the functions of the endocrine organs is summarized by Swale Vincent. According to this physiologist, the adrenal medulla appears to be of no importance, the function of the adrenals being "probably wrapped up" in the cortex. The thyroid, he suggests, may serve to increase the "flexibility of energy output"; the parathyroids would seem to keep low a toxin in the blood, "probably guanidin." As to the pituitary, recent experiments suggest the probable need of "a reconsideration of our whole attitude in relation to the pituitary body." The thymus may be antitoxic, but no reliable evidence indicates that "mors thymica is due to abnormality of the thymus." As to the interstitial tissues of the gonads and the islets of Langerhans, the evidence that they provide an internal secretion is "by no means convincing."

It would be well for my colleagues of the clinical field to realize that this is the product of the nearly seventy years' efforts by physiologists to identify the functions of the ductless glands. Would such insignificant results during such a period in any other walk of life not be characterized as a failure, and warrant any reasonable hope for the future? R. G. Hoskins referred to this group of workers as being desirous of keeping medicine "pure and undefiled," but as he states, "efforts aimed merely at purity have not infrequently as their most significant end result sterility."

Endocrinology as it is interpreted by physiologists today is the sole underlying cause of the "utter disrepute" towards which they deem this newer branch of medicine to be drifting, for the vagaries they criticize are but efforts to compensate by guesses and a variety of groundless premises for light that they have failed to furnish. Even the random use of organic extracts is traceable to them, for it is obviously impossible to administer any such agent rationally as long as the functions of the organs from which they are derived remain unknown. The truth of the matter is that it is the endocrinology of physiologists which is falling into disrepute, and the sooner clinicians realize this fact the better it will be for sufferers, their main concern.

I have long urged that domination by any one branch of medicine, an auxiliary one such as physiology in particular, was fatal to progress, and time has shown that a spirit of justice to all branches, with harmonious coöperation of all workers as invariable principle could add much to our efficiency in the sick room. Finally, our profession is suffering greatly at the present time owing to the phenomenal development of cults as a result mainly of the therapeutic nihilism which flourished in all its glory two decades ago. Caution is necessary at the present time lest the "pure and undefiled" again prevail with "endocrinologic nihilism" and sap a line of thought capable of great good for the welfare of all concerned. Very truly yours,

C. E. de M. Sajous.

Philadelphia, Pa., June 14, 1923.

AMERICAN MEDICAL AID FOR RUSSIA

(medical section american friends service committee)

June 12, 1923.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: An earnest effort is being made by the American Medical Aid for Russia, the Medical Division of the American Friends Service Committee (Quakers), to collect money, clothing, instruments, books and journals for our medical colleagues in Russia.

The condition of these men is deplorable. Removed happily by nature of their profession from the political disturbance, they have suffered doubly from the troubles of the last six years in that, while the demands for their assistance have multiplied immensely, they have been almost deprived of medical supplies, indeed, even of the necessities of life. They not only lack the barest necessities of food and clothing, but are terribly in need of drugs, medical and surgical instruments and of scientific books and journals in English.

The Quakers are in a position to assure American physicians who are willing to assist their Russian colleagues, that contributions will be promptly and efficiently distributed in Russia. Literature will be distributed in coöperation with the Russian Health Department through notices printed in the official bulletin, to the effect that medical literature in English is available and can be had on request. The Quaker relief workers will directly supervise the distribution of this material to Russian hospitals, medical schools and individual physicians.

If every one of us would make his personal effort to help send such money and clothes as he can, to send files of journals which he does not use himself, as well as such medical books and instruments as he can spare, it would be an immense help.

It's not a charity; it's a duty.

Yours sincerely,

W. S. Thayer,
103 Park Ave., New York City.

Warehouses located at 108 Dobbin St., New York City, and 1521 Cherry St., Philadelphia.

Dr. O. Pine queries: How little encouraging to further endeavor on the part of one who has prepared for your mental entertainment a worthy paper on an important subject is a perfunctory, lukewarm, polite handclapping coupled with no discussion? Can you censure this brother for failure to provide any future contribution, and can you not realize that he cannot rise to his highest peak, unless you help him climb?

County Medical Societies

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
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Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
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Crawford—Cornelius C. Laffer, M.D., Meadville.
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Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

* Deceased.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
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Northumberland—Charles H. Swenk, M.D., Sunbury.
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Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert D. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

July, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—JUNE

The Dauphin County Medical Society held its annual clinic June 5th at the Harrisburg and Polyclinic Hospitals as its final meeting before the usual summer recess.

At the Polyclinic Hospital Dr. H. F. Gross demonstrated three interesting surgical operations from 10 to 12: excision of a strawberry gall-bladder with a suspected malignant tumor attached; a cesarean section of a full term pregnancy in a nephritic primipara (although five convulsions followed the operation, the mother and child made a rapid recovery) and a trachelorrhaphy and perineorrhaphy.

At the Harrisburg Hospital from 8:30 to 11 a. m. Dr. H. F. Smith operated on eight cases, among which were two cholecystectomies, an abdominal hysterectomy, a right inguinal hernia, application of radium for carcinoma of the rectum, and an osteology of arm for osteomyelitis. In the afternoon Dr. G. B. Stull repaired a fractured patella. Dr. J. B. McAlister presented and discussed acute rheumatic fever and its complications. Dr. D. S. Funk gave an illuminating talk on appendicitis and pyelitis in children, emphasizing the special points in diagnosis gleaned from his own experience, such as the absence of chills in pyelitis, the dearth of positive signs on physical examination, and the necessity for repeated urinalyses to detect pus. Dr. H. B. Walter and Dr. R. J. Miller demonstrated some fractures with unusual features. Miss Alice M. Morse gave a short discussion on the nursing problem. This completed the morning program and a buffet luncheon was served to the members.

In the afternoon Dr. J. F. Culp covered in a scholarly manner the subject of mastoid disease, from the intricate anatomy to the technique of treatment, warning against procrastination in surgical interference when external measures have failed to bring relief promptly. Several cases were on hand for inspection, presenting complete relief from symptoms and a most satisfactory cosmetic result. Dr. Culp demonstrated incidentally a case of carcinoma of the external ear that had been treated by radical removal and electrocauterization. Dr. J. W. Park had several eye cases of interest. Drs. C. S. Rebuck, G. L. Dailey and H. H. Farnsler held a highly instructive ear, nose and throat clinic. Dr. A. Z. Ritzman illustrated with slides quite a variety of x-ray conditions met with in the hospital and in his private practice. Dr. N. B. Shepler reported several cases of abdominal pregnancy, and Dr. Carson Coover discussed several orthopedic and fracture cases with x-ray demonstration. Dr. C. P. Faller gave a short talk on nitrous oxid and oxygen anesthesia during the morning operative clinic. Dr. G. R. Moffitt and Dr. L. W. Wright explained the technique and interpretation of many laboratory procedures, including the gold sol. curve, blood sugar estimation, pathological sections and the Wassermann reaction.

A business meeting concluded the program, which from its wealth of material and its skillful preparation and presentation impressed the members of the Society and visitors with the inestimable value of hospitals as centers of medical education, whose resources are always open to those that wish to take advantage of them.

W. M. Kunkel, M.D., Reporter.

ERIE—JUNE

The Erie County Medical Society met June 7th and was addressed by Dr. Robert B. Osgood, Professor of Orthopedics at Harvard Medical School. His subject was "Background of Orthopedic Surgery and Its Present Purposes." Dr. Osgood spoke as follows:

The history of what we understand as orthopedic surgery to-day begins with the history of medicine, and I have found the small part of the story which I know a fascinating one. I am glad also to try to outline what I believe is the present purpose of orthopedic

surgery, speaking without authority, but with a firm conviction that it has a purpose.

Let us, then, start with the mythical father of medicine, Æsculapius, whose sons Podalius and Machaon become celebrated in the Homeric poems for their skill in treating the wounds of the Greek soldiers. Religion and speculative philosophy and medicine were all bound together then, and the priestly Order of Æsclepidæ built the Temples of Health and sought, without much record, to transmit the healing arts which they learned. In the Temple of Cos, Hippocrates served as a priest and began to record his knowledge, so that modern medicine really began with his writings nearly two thousand years ago. It is surprising to find how much attention Hippocrates devoted to extremity surgery and the group of congenital deformities which are the foundations of orthopedic surgery. In the two-volume edition of his works which I possess, half of one of them is devoted to bone and joint surgery. I wish to read you a few quotations from the writings of Hippocrates which are almost discouraging. They show how little we have added to his knowledge in two thousand years. In discussing fractures he says:

"The splints are to be smooth, even and rounded at the extremities, somewhat less all along the upper bandages and thickened at the point to which the fracture inclines. Those parts where there are tuberosities and which are devoid of flesh, such as the ankles or fingers, we must guard from the splints which are placed over them. The gutter-like splints should rather comprehend the whole limb than the half of it."

"The presentation of the injured part to the physician, the extension, the arrangement, etc., are to be regulated according to nature, but what is nature in these operations is to be determined by the accomplishment of the object which we have in view, and for this purpose we must look to the part in the state of rest, in its middle state, and to habit. In regard to the state of rest and relaxation, as in the arm, that it be in line with the hand; and with regard to the medium between flexion and extension, that the forearm be at right angles to the arm. With regard to habit, it should be considered that some limbs bear certain positions preferably, as for example the thighs, extension; for in such attitudes the part can best bear to be placed without a change of posture."

"The extension (traction) should be most powerful when the largest and thickest bones or when both bones are broken. Suspending of a fractured limb in a sling, the disposition of it and the bandaging, all have for their object to preserve it in position. The principal considerations with regard to position are habits and the peculiar nature of each of the limbs. The varieties are shown in running, walking, standing, lying, action, repose."

"In treating parts which are atrophied, we must comprehend a considerable part of the sound part of the limb with the bandage, so that by the influx thereby produced, the wasted part may acquire a supply of blood greater than its loss."

Do you hear Thomas advocating this damming of the part, and Bier talking of his passive hyperemia? Here we have most modern conceptions of treatment and of functional considerations. One other example, Hippocrates' description of the dislocation of the hip joint, is perhaps more complete than that of any ancient or modern writer, and in his description he includes congenital dislocation and dislocations as a result of disease. His chapter on club foot states correctly the true nature of the malformation and gives most rational methods of treatment for rectifying the deformity in early life. He then emphasizes the necessity of retaining the correction for a long time after a cure has been effected. He describes an apparatus which may well have been the inspiration for the formerly much employed Scarpa's shoe.

We often wonder that osteopathic manipulations of considerable violence do so little harm, but Hippocrates appreciated the comparative safety of energetic manipulations of the spine. For instance, advising treatment for scoliosis, he says in relation to manipulation: "The method of applying force is particularly safe and it is also safe for a person to sit upon the hump while extension is being made and to raise himself up, to let himself fall again upon the patient."

We must pass over some 1500 years of darkness lighted by a few bright medical torches and watch a great French war surgeon, Ambroise Paré, at work. Paré lived from 1510 to 1590, and served under several French kings who were nearly always at war, thereby having a long war experience. He fought for the elevation of the trade of surgery to a place by the side of the profession of medicine, and in a great measure won his fight. He recognized the potential seriousness of joint injuries and the importance of drainage. He looked to future function and realized that the ligaments and tendons must be conserved. He appreciated the atrophy of disuse and the value of early motion. He devised many excellent open splints for the treatment of fractures. Paré caught a glimpse even of the antiseptic era as he poured boiling oil into the wounds of soldiers, and after this crude and painful but fairly efficient cleansing, watched them heal without fever or constitutional symptoms. More than these specific contributions, he left us two great surgical axioms: "The surgeon may dress the wound but God must heal it;" and the other that "The first duty of the surgeon is to do no harm (*primum non nocere*)."

Even in Paré's time the French were beginning to think of preventive medicine, and the Latin poem entitled, "Pædatrophia," by Sainte Marthe, appeared in 1584, upon the manner of bringing up and nourishing young children.

It is not until 200 years later in 1741, however, that we find the aged Dean of the Faculty of Paris and Professor of Medicine of the University of Paris spiritedly defending his thesis on the Art of Preventing Deformity in Children. This is Dr. Nicholas Andry, who published his two-volume book, "Orthopædia," when he was 81 years old. He coined his word without too meticulous an attention to the rules of philology from the Greek words *θρθός*, meaning straight, and Παι *Σίου*, a young child. If we take liberties ourselves and derive the word "orthopædic" from *θρθός* and the verb Παι *Σέμω* to educate, which has the same root, we have perhaps as satisfactory a definition of the past and present effort of orthopedic surgery as we can ask. Our fathers have certainly been trying and *we* are *still* trying to "educate straight." There seems to be still plenty of crookedness to warrant the continuance of our efforts.

Andry considered the scope of Orthopædia to be very wide, including the deformities of the teeth, dumbness, stammering, the deformities of the skin, and the faults of the complexion. The headings of many chapters, however, are extraordinarily like the titles of certain medical articles of to-day. For example, "In what posture young girls ought to sew, read, etc.," and again, "The means of preventing the bellies of children from projecting too much forward, and how to keep their backs straight. How they ought to sit to produce this effect; particular seats for this purpose." Andry teaches the correct posture in walking by making the children balance objects on their heads. He overcomes contractions of the calf group by making his patients

walk up hill. He corrects an early wry neck by prescribing positions in which the child shall be laid by the nurse to overcome the contraction. If he prescribes for one "a bucket of tripe broth moderately warm" and for another a liniment made out of oil of worms, we may be reasonably sure that it is only a tactful concession to the fanciful but well-established therapy of his day and not because he has great faith in the efficacy of these external applications.

An amusing instance of Andry's faculty of observation and his resourcefulness is recorded in connection with a case of torticollis in a young girl. He had tried, without much success, to rectify the condition by means of exercises. One night the child was taken to see an exhibition of fireworks and it happened that she was so placed that she could observe the spectacle only by turning her head away from the position of her deformity. Her eagerness to witness the spectacle was so great and her efforts so violent that the next day Andry observed an almost complete correction of her wry neck. A case presenting a similar deformity soon consulted him, and impressed with the result of the former child, he arranged for another exhibition of fireworks and deliberately had this second child placed like the first, with equally satisfactory results. The prevention and cure of deformities by means of exercise was thus advocated by Andry, and while his methods were often crude and not always efficient, he emphasized a great principle, the importance of which has been recognized ever since. He gave the name to the special branch of surgery we are discussing.

His contemporaries were the anatomist and surgeon, Jean Pierre David of Rouen, born in 1737, and dying in 1784, and the great John Hunter of England, who was born a few years before David and died a few years later. David recognized that exercise and motion were not a cure for all bone and joint conditions and that rest was often a more potent factor than either. We find him advocating recumbency in caries of the spine and attempting to discover the indications for these two opposite methods of treatment. Hunter spent ten years in the dissecting room, served as an army surgeon for three years, struggled for existence in London for five years, and then attained prosperity, which he enjoyed for ten years. Hunter, like Paré, taught that the restoration of function was chiefly brought about by powers within the living tissues themselves. He actually worked out a system of physiotherapy based upon these inherent powers plus the patient's will to recover. Occupational therapy, of which we hear so much, began with Hunter 250 years ago.

Before Hunter died, Jacques Delpech was born in Toulouse, and after studying in Montpellier, became Professor of Surgery of the extraordinarily productive Montpellier School. Sir Arthur Keith considers Delpech the virtual founder of orthopedic surgery. An anatomist, an embryologist, a physiologist, and a surgeon, in 1829 he published l'Orthomorphie when he was only a little over forty. Clearly written and exquisitely illustrated, it remains a monumental work. Like Hunter, his methods of treatment were based on the action of the healthy living body. He appreciated the importance of muscle tone and postural tonus, and realized that deformity occurred when the normal muscle balance between antagonistic muscle groups was for some reason disturbed.

In l'Orthomorphie are to be found illustrations of a little palace hospital which Delpech succeeded in building in the beautiful country about Montpellier. In lovely gardens were erected all sorts of exercising appliances and his lady patients, arrayed in the most fashionable bloomers, enjoyed nature while they were being cured of their deformities. It was on the road to this orthopedic hospital that Delpech was murdered in 1832, at the age of 55, by an ungrateful patient upon whom he had performed a radical operation for varicocele.

To Delpech we owe the operation of subcutaneous tenotomy, later popularized by Stromeyer of Hanover. Delpech performed it for the relief of club foot, seeking thereby to relieve the unbalanced condition of the muscles and by this method the entrance of air into the wound, which he erroneously considered to be the cause of the dangerous suppuration which at this time followed almost every open incision.

George Louis Frederick Stromeyer had witnessed Delpech perform his subcutaneous tenotomy and extended the method. He too, after a year in London observing the methods of the English surgeons, founded a modest orthopedic hospital in his native town of Hanover about 1830. It was this hospital that John Little entered for the relief of his own equinovarus, and Little later became the pioneer orthopedic surgeon of England. The immediate result in his own case was so successful and Little was such a loyal exhibitor of his own cure that tenotomies for all sorts of deformities ran riot among the surgeons of the continent and England. Before Little died in 1894, he became convinced of the marked limitations of the method, and in an address delivered in Edinburgh in 1876, he made it clear that most distressing results might follow its indiscriminate employment. After forty years of experience, he came to appreciate the fact that if a muscle could be gradually stretched without tenotomy, it recovered its function better than after a division; that nothing could take the place of infinite patience in gradually correcting deformities, and with the persistence of a lover, wooing function to return.

Within the span of Little's life, Hugh Owen Thomas lived and died. He was born in 1834 and died in 1891, three years before Little, who had retired from practice in 1884. The world hears much more of Thomas since the war than it did during his lifetime, and yet this great descendant of a family of Welsh bone setters was perhaps the closest observer who has ever lived of the symptoms and signs of bone and joint disease. Never in robust health, frail and short of stature, nervous in temperament, of imaginative mind, he broke away from family traditions and the practice of his father and uncle and studied medicine in Edinburgh in the time of Syme, Simpson, Lister and Bennett. When he was twenty-three, he became a member of the Royal College of Surgeons of England and soon after, began his practice in Liverpool at 11 Nelson Street, in a house which is still the office of his famous nephew and successor, Sir Robert Jones.

Thomas lived in the time of the great London surgeon, John Hilton, whose book, "Rest and Pain," may have impressed him. Certain it is that rest became the sheet anchor of his treatment of bone and joint disease. The mechanical means whereby this rest could be most perfectly furnished to the diseased part was his important concern. In his home he installed a very perfect machine shop and took delight in making with his hands the apparatus which his brain had planned. After twenty years of experience, during which he did much surgery, one of his favorite sayings was that "The blacksmith's hammer deftly used was in most cases a more powerful reparative instrument than the surgeon's knife." What came out of that shop at

11 Nelson Street we now know, and thousands upon thousands of soldiers have consciously or unconsciously blessed Hugh Owen Thomas for ease from pain as the stretcher-bearers on the battlefield applied to their broken arms and legs the splints devised by him. Transport became then a welcome escape easily borne, instead of a hideous nightmare of suffering, ending often in death. The mortality rate was reduced from over 80% to 15% when the stretcher-bearers applied the splints on the battlefields instead of waiting until the wounded were moved, as before.

In America we see the early light of functional surgery, when John Ball Brown of Boston in 1839 opened in a small private house a hospital for the treatment of orthopedic cases. His son, John Buckminister Brown, himself a cripple like Little, became so much interested in this type of surgery that he determined to limit his practice to it. He was the first American surgeon to take this step. A ward was assigned to these cases in the hospital of the Good Samaritan in 1861, and in 1863 the hospital for the Ruptured and Crippled was founded in New York City.

While Delpech and Bouvier, Malgainge, Guerin, Piaraz, Heine, Diffenbach, Langenbec and Thomas were studying these bone and joint cases clinically, and devising methods for their betterment and cure, MacEwen in Glasgow, and Ollier in Lyons, were studying bone growth under the microscope and arriving at diametrically opposite conclusions as to the part which the periosteum plays in the regeneration of bone. MacEwen maintained it played no part and described his ingenious experiments in a book in 1880. They are both right, paradoxical as it may seem, for one considers the periosteum to be only the external fibrous envelope, which has little or no power to build new bone, and the other includes in his periosteum the rich layer of osteogenetic cells which are usually detached with it.

Ollier made experimental physiology the basis of all surgery, and the most of our fundamental conceptions of bone structure and growth and repair come from the Professor of Clinical Surgery of the University of Lyons.

And now when the great minds seemed sharply focused upon this type of surgery, their attention was suddenly withdrawn by the most important medical discoveries of the nineteenth century. Semelweiss, in 1874, had glimpsed it, but his success in reducing the mortality from puerperal fever in Klein's Clinic in Vienna from 12% to 1.5% had driven him from the city because of the jealousy of his chief. His antiseptic for the surgeon's hands and the patient, was chlorinated lime water. It was not, however, till Pasteur in 1850 began his work on fermentation, and applying the information concerning germs, cured the silk worm disease in 1865, that Lister had the vision of aseptic and antiseptic surgery, publishing his first article in 1867.

The immediate success of his methods and the later work of Pasteur on anthrax and rabies left little necessity for further proof of the germ theory. Suddenly the field of surgery became enormously enlarged. Scarcely any part of the body could now cry, *"Noli me tangere,"* and most of the active minded surgeons of ability turned their attention to the belief of acute disorders and left the chronic cripple to the brace maker. Before many years he began to be rescued again in America by the powerful personalities of Lewis A. Sayre and Charles Fayette Taylor and others, to whose medical training was added a strong mechanical sense. The jackets and braces applied by them were perfect machines and really accomplished the purposes for which they were applied. Dr. Edward H. Bradford of Boston, also dignified orthopedic surgery, which had fallen to a low estate, by electing to devote his life and great abilities to this type of surgery after a splendid medical and surgical training and with other great opportunities before him.

In Italy also there came a great renaissance, for which Allesandro Codivilla was largely responsible. Codivilla was born in 1851, and at 25 had received his doctorate. He practiced and taught general surgery for many years in different university clinics, making enduring contributions to the surgery of the brain and the stomach. Soon the great untilled field of extremity surgery attracted him and he began to confine his activities to this branch of surgery. He was appointed Professor of Orthopedic Surgery in the University of Bologna and Director of the great Instituto Rizzoli, which post he held until his too early death in 1913. We owe Codivilla more than is generally realized. He perfected the technique of amputations and produced stumps of greater functional adaptability. He studied the pathological anatomy of congenital dislocations of the hips and devised methods of reduction which he practiced successfully and which are still employed. Tendon transplantation became a practical and efficient procedure, largely owing to Codivilla's study. Tendon fixation, tenodesis, was, we believe, originated by him. He was the first surgeon to call attention to the efficiency of osteoperiosteal bone grafts for nonunion of bones, long before, as it is to-day, the method of choice. We owe to him the principle of direct skeletal traction as the best means of overcoming shortening and securing alignment of fragments in difficult fractures.

His personality was engaging and inspiring, his humanitarianism was broad, his ethical principles were high, his skill as a surgeon was recognized and admired by his peers. In Codivilla we have perhaps as perfect an embodiment of a surgeon as we shall find. He added great dignity to orthopedic surgery, as is evidenced by the tribute which general surgery, speaking through Biesalski, paid to the specialty at Codivilla's death. Biesalski said that he had devoted his life to "that art which requires profoundity of knowledge and acuteness and fineness of mind and hand perhaps more than any other branch of surgery." The inspiration of a great character is often shown by its power in stimulating other men to continue and amplify the work which they laid down. Thus Hugh Owen Thomas inspired Sir Robert Jones, and thus Codivilla inspired Professor Vittorio Putti, who as his successor at the Instituto Rizzoli, has not only cultivated the fields which Codivilla tilled, but is constantly enlarging their area and giving us new fruits of his labor.

Now comes the great war. In the early months of 1915, it was evident that the French military medical department needed help, and university units were organized to supply for periods of three months a surgical service at the American Ambulance in Paris. A Harvard unit under Dr. Harvey Cushing and Dr. Robert Greenough was formed in February, 1915, and I was asked to suggest a young orthopedic surgeon for its staff, on the chance that he might possibly be useful in connection with plaster work and apparatus. Egotistically I suggested myself, for I felt sure there would be many problems which would be interesting in connection with the convalescence of war wounds. The experience proved that the only limits to usefulness were those imposed by the necessity of sleep and nourishment and the maintenance of health. Allison of St.

Louis, followed, and was as busy as we had been. Coming back convinced, as some of us were, that it was only a question of time before we should be drawn into the whirlpool, we succeeded in having committees appointed by both the American Orthopedic Association and the Orthopedic Section of the American Medical Association, with Dr. Joel E. Goldthwait as chairman of both. Then began efforts at preparedness by working out lists of necessary supplies and making a canvass of available young orthopedic surgeons of the country who would be ready to go when the call came. Thus it was that when in the spring of 1917, the British Medical Department, through Sir Robert Jones, sent a call for help to their new American allies, Goldthwait was ready to sail in a week with twenty well-trained men. It had already been made clear to Sir Alfred Keough, the Director General of the British Medical Service, that unless the mass of bone and joint deformities flooding the British home base hospital could in the first place be prevented at the front, and in the second place, be corrected when they had occurred, the country would be flooded with hopeless cripples and the man power of the nation dangerously weakened. So he had said to Sir Robert, whose vision and skill he had fortunately recognized, "Take whatever hospitals you need for this special surgical work and man them as you can." But there were no more men in the British Isles trained for this type of functional rehabilitation surgery. Medical men could not be trained for this work quickly, and so he appealed to his American friends and allies.

The surgeons whom Goldthwait brought over were at once given assignments in these special British hospitals and their work began under the great master. Goldthwait went back to America, recruited forty more orthopedic surgeons, secured their commissions and returned with them to England in the autumn when the need again became acute. Among them was Dr. Arthur Davis of Erie.

This noteworthy service was valuable in two ways. It served our allies and it trained as they never otherwise could have been trained, a large group of surgeons who were sorely needed by our own troops later in the war when they were released by the British for work with our own Expeditionary Forces. I know of their service, for I watched them at work during the winter of 1917 and 1918 in the British Isles, and saw their work under Finney and Goldthwait and Allison and Baer in France in the spring with our own troops, and I watched them again after the armistice as they came back to serve in our American General Army Hospitals. You probably know of the great debt we owe to the American Red Cross for the splints. It was formally decided that seven splints would take care of all the fractures. These splints were standardized and made up in quantity and supplied by the American Red Cross.

The supervision of the after care of all bone and joint casualties overseas had been assigned by General Ireland and General Finney to Colonel Goldthwait. A system of radical control was established which made possible a review of nearly all these cases before they were sent home. When I tell you that instead of 40 or 50 per cent of preventable deformities, which in the early years of the war were sent back to England, our bone and joint casualties arriving in America showed less than 10 per cent, you can estimate the efficiency of this service. At first we were quite naturally misunderstood. Orthopedic surgery seemed to be claiming too great a part in the surgery of the war, but as soon as our purposes were appreciated, coöperation became hearty. The experiences of those who traveled about this country visiting the Army hospitals and camps was a most happy one. Petty jealousies were rarely met and most easily overcome. It made no difference what type of surgeon treated these cases, provided only that the methods which had been proved to bring about earliest return of function were carried out.

And we should not close our chapter on the war without paying warm tribute to those surgeons who, because of the need, temporarily at least, left the ranks of general surgery and took the special orthopedic training courses given in different parts of America. Many of them never went overseas, but served in the camps, examining, excluding and rehabilitating the man force of the nation. Their devotion to duty was beyond praise and was recognized by their commanding officers.

I have tried to sketch dispassionately the background of what is called, for lack of a better name, orthopedic surgery. It is probable that I have drawn too boldly and perhaps used too brilliant colors in an enthusiasm which one feels for a subject which is the motive of his endeavor. I will ask you to believe, however, that I have honestly tried to let you see this motive. Shall we now try to outline the present purposes?

First, let us try to review a few evidences of progress of, let us say, the last decade. We know practically nothing more of the causes or the transmission of that apparently increasing scourge, infantile paralysis, but we do know much more concerning its treatment. From the seemingly reliable statistics of the Harvard Infantile Commission, of which Dr. Robert Lovett is chairman, at least 50% of the cases are abortive, and full or practically full recovery takes place without specialized treatment. There remain, unfortunately, many cases where permanent damage to the neuromuscular mechanism has been done. What can we do to rehabilitate these cases? We have learned that by patient, intelligent special muscle training very much can be done. If we should dissect the arm and hand of Paderewski and another arm and hand of the same size and lay them side by side, no one could tell one from the other. And yet what a vast difference between the accomplishments of those hands! Skilled labor in any trade is the result of long and patient training. The same physiologic laws obtain in the rehabilitation of cases of poliomyelitis. Muscle training is of utmost importance, and we are learning also that certain combinations of tendon transplantation are not giving the results hoped for and that certain other methods are restoring almost perfect function; for example, in complete loss of continuity of the musculospiral nerve, in which a part of the generous supply of the palmar flexors is utilized to restore dorsal flexion. We are learning from Hoke how skillfully to adapt the architecture of the foot to change conditions of muscle pull and make the weakened feet grow straight and not feel the loss of muscular support. Rational functional surgery is making the bracemaker poorer, but the life of the crippled child richer.

As the milk supply becomes cleaner, tuberculosis of the bones and joints is becoming more rare. We are learning not to call every low-grade monarticular infection tuberculosis, and instead of frightening the family and putting the limb in a permanent plaster or cumbering it with a brace, we are learning to observe it, and clear out the bowels and examine the tonsils and teeth, and then watch it in recumbency and often see it return quickly to normal function. We are appreciating defense mechanisms, and visiting Rollier on the Alps at Leysin, not to see poorly nourished, depleted children with pinched faces, but to look into the bright

eyes of abounding health and stroke the plump, brown, velvety bodies of little Indians playing in the sunny snow with nothing on but canvas hats and breech cloths. Heliotherapy carefully carried out by known rules is an enormous advance in the treatment of surgical tuberculosis.

There is another class of children with whose serious ills much progress is being made. You are all familiar with the poorly nourished child who cannot be made to gain weight by the most careful feeding, who may have attacks of indigestion, perhaps cyclic vomiting, who even if he becomes constipated, may have convulsions not to be distinguished from epilepsy. Such children usually show round shoulders, weak back muscles, protruding abdomens and pronated feet. They are the ptotic children whom Bean and Treves and Bryant have recognized as the type hypo-ontomorph. Their bodily mechanics are at fault, and with postural training and rest periods in corrective positions, with now and then a temporary supporting brace, their weight increases, their digestive upsets disappear, their bowels move normally and the threatened curse of epilepsy is removed.

Much work needs yet to be done on the causes of low back pain and sciatica, but at least we are no longer satisfied with a diagnosis of sciatica, and certain gynecologists are maintaining that the misplaced uterus is very rarely responsible for back pain. Faulty posture, with increased lumber lordosis is accounting for lumbosacral strain and the occasionally relaxed and painful sacro-iliac joints. Anatomic variations which are most common in this region can be discovered in the roentgenogram. The unilateral massive transverse process of the last lumbar, with its bursa or true joint with the sacrum, the sacralized last lumbar or the lumberized first sacral vertebra, all these variations are being recognized as potentially important conditions making strains more easily suffered and accounting for the persistence of symptoms.

Perhaps the diseases which are most important in relation to their widespread incidence, their crippling nature and their uncertainty of cure are the different types of arthritis deformans. They have come within the purview of orthopedic surgery, because when the fires of infection or faulty metabolism have burnt out, we are called in to correct or better the acquired joint deformities. Stimulated by the pitiful sight of these cripples, we have sought to understand the etiology more clearly, and prevent what we cannot cure. At least we have come to recognize two types which are probably separate diseases and surely need very different treatment. We know that whatever benefit may be derived from the salicylates in acute rheumatic fever, nothing but harm can come from their prolonged use in these conditions. They may be useful to relieve pain temporarily, but continued they disturb digestion and unfavorably affect the already upset metabolism.

Undoubtedly in many of the cases of Ely's type I, foci of infection play an important part, but just what part is not as clear as the recent literature would lead one to believe. Badly infected tonsils and diseased teeth give rise to no arthritis in many inviduals. There apparently must be a background, a diathesis, before their relation is causal. We have all seen bad tonsils and bad teeth removed and a chronic arthritis continue to involve new joints with no abatement of its course. Pemberton, in his army studies, showed the intimate relation of diet, and his past and present biochemical studies offer us many leads of hope. Meanwhile, some of the "incurables" are recovering and the morbid process is being arrested in many cases by increasing elimination through the bowels and skin and correcting the body mechanics by positions of rest and exercise.

Whether or not the orthopedic surgeon shall seriously invade the field of fresh fractures must depend upon the general surgeon. If the general surgeon wants them and will acquire the knowledge and skill in handling them from the break to the return of wage-earning capacity, they should be his, but the same man ought to see them through. There should be no division of authority or sharing of responsibility. The problem is a serious one. Industrial insurance companies are crying "Come over into Macedonia and help us." The average orthopedic surgeon ought to be well qualified to aid in the restoration of function in these cases. Whether he fits himself to meet the emergency, be it operative or nonoperative, or whether the general surgeon learns to apply the proved methods of speedy rehabilitation, makes no difference, but we repeat, the same surgeon must do both. The traveler has never found it advantageous to swap horses in midstream.

The present purpose of orthopedic surgery is, therefore, not to take away but to add. It should become less and less separate from and more and more a part of general medicine and general surgery. It must lose its own soul in order really to find it. Its ultimate goal should be to disappear as a specialty. But it ought not to disappear until its principles are accepted and it has solved some of the problems which have been presented to it. It is but a part of the parent trunk rather than a special branch. It has no sharp anatomic limits like most of the other specialties, eye, ear, nose and throat, or even gynecology. It is to try to educate straight and its basic purpose is the same as that of every other branch of medicine; namely, the restoration of function.

While there will always remain those to whom the crippled child will appeal with such force that they will elect to become specially skillful in the correction of such congenital conditions as club feet and in the treatment of the chronic bone and joint diseases of children, such as tuberculosis and ostomyelitis, yet the adult cripple, when he is recognized, is capable of making no less strong an appeal. This adult cripple is by no means always crippled by actual deformity. The mass of human derelicts which are referred to an adult orthopedic clinic is appalling. The debilitated ptotic, the chronic arthritic, the lame backs in women and men, the weak feet, the stiffened muscles and joints following fractures, these are but a few of the problems which each day's clinic presents. They are not hopeless problems, and no more grateful patients can be found than those in whom it has been impossible to accomplish anatomic cures, but in whom it has been possible to restore function and independence. The case of lateral sclerosis who can expect no neurilogical help, but who has been taught to walk reasonably well and can abandon his wheel chair will be more appreciative than the man who has had proper weight-bearing lines accurately secured by the correction of his maligned tibia, which was sure to cause future ankle joint and foot strain.

The existence and persistence of these problems, ladies and gentlemen, is the only excuse I have to offer for our persistence.

ANNA M. SCHRADER, M.D., Reporter.

LUZERNE—JUNE

Members of the Luzerne County Medical Society gave a testimonial dinner on June 1st, at 7 p. m., at the Westmoreland Club, in honor of Dr. Charles H. Miner,

State Commissioner of Health. Various speakers expressed the gratification of the community over the local man's appointment to the most important health post in the state, and pledged their constant support and coöperation.

Dr. Edgar M. Green, member of the Advisory Health Board of Pennsylvania, spoke on "Community Health." Dr. F. R. Wheelock, City Health Physician of Scranton, talked on "The Relation Between the City and the State Health Departments." Dr. Lewis H. Taylor, who described the beginnings of the State Board of Health, and Colonel P. M. Ashburn, Commander of the U. S. Army Field Medical School at Carlisle, Pa., also addressed the Society.

Among those who spoke briefly, paying tribute to Dr. Miner, were Dr. L. R. Thompson, of Washington, D. C., of the Department of Industrial Hygiene and Sanitation of the U. S. Public Health Service; Dr. J. Anson Singer, of Stroudsburg, Pa.; General Asher Miner, Dr. S. P. Mengel and Dr. E. L. Meyers, of Wilkes-Barre, Pa. Dr. N. L. Schappert presided as toastmaster.

Dr. Miner replied to these tributes by urging all the physicians to consider themselves members of the State Department in their efforts to safeguard health. "The work calls for the intelligence and hearty coöperation of the medical profession and of the general public." Oppenheim's orchestra furnished music during the dinner.

The regular meeting of the Society was held in the Medical Building, June 6, 1923, and was called to order at 8:45 p. m.

Election of delegates for the State Society meeting in October resulted as follows: Drs. S. P. Mengel, Charles Long and Walter Davis. Alternates were Drs. Lewis H. Taylor, P. P. Mayock, D. G. Robinhold, A. W. Grover, G. R. Drake, and P. F. McHugh. Dr. S. M. Wolfe was nominated to be recommended to the House of Delegates as District Censor.

Dr. W. S. Stewart and Dr. Lewis H. Taylor gave a most interesting description of their trip to South America, with the American Surgeons' Convention, describing the cities visited, the various hospitals and the characteristics of the different countries.

The outing meeting was held on June 20th, at Ambrose West's "It'll Do Farm," near Dallas, Pa.

Lunch was served at 1 p. m., and an elaborate dinner and clam bake was held at 5 p. m.

A very exciting baseball game between the Mercy Hospital Staff and the City Hospital Staff was played. Numerous other sports, including tug of war, fat man's race, quoits, etc., were indulged in.

H. IRVIN EVANS, M.D., Reporter.

MIFFLIN—JUNE

An especially interesting and profitable meeting of the Mifflin County Medical Society was held at the Coleman House, Lewistown, June 7th, the occasion being a paper read by L. J. Durbin, district attorney, and a reception to Dr. J. A. C. Clarkson, who recently returned from a trip to the Orient and the Near East, these two events making the regular June meeting of the local society a memorable one.

Delegates were elected to the annual meeting of the State Medical Society to be held in Pittsburgh in October. Those elected were Drs. J. P. Getter, H. W. Sweigart and F. A. Rupp, primerius, first and second alternates, respectively.

The local medical men very much appreciated the presence of the district attorney of Mifflin County, and Mr. Durbin's paper on the subject, "Medical Testimony," was exceptionally well prepared, covering a subject of unusual interest to the doctors. In the course of his address, Mr. Durbin stated that medical testimony was one of the most important kinds of testimony, especially if given with caution. The general family medical practitioner is considered by the court as competent to give expert testimony, even though the physician is not a specialist. A jury may and often does put as much value on the testimony of such a medical witness as on the testimony of a specialist.

Medical testimony, continued Mr. Durbin, is of three classes, based on facts as observed by the physician, based on conclusions drawn from observations by the medical witness and based on the opinion of the medical witness, this opinion drawn from hypothetical questions. As between medical testimony based on facts observed and testimony drawn from hypothetical questions, the testimony of the former is generally considered by the jury of more value. Expert medical testimony is very often considered as of little value because people generally believe such testimony is colored and biased by the expert in favor of the one who pays, and very often pays large monetary considerations for such testimony. However, Mr. Durbin expressed the belief that such biased testimony was not so common as generally believed.

Medical testimony is especially important in criminal cases, such as cases of homicide where such testimony is practically indispensable, "corpus delicti" (body of the crime) being practically always proved by medical testimony. In giving such testimony, Mr. Durbin strongly emphasized the fact that medical testimony must always be definite and positive, and couched in language that the jury can understand. A doctor might testify that the patient died from "encephalitis lethargica," and not from a blow on the head. But such testimony will have more weight with the jury if the same doctor will state that the patient died from "sleeping sickness," the two terms meaning the same thing.

Mr. Durbin's talk was thoroughly enjoyed by the medical men, and elicited discussion and questions. A rising vote of thanks was given the district attorney for his valuable paper, after which the society adjourned to the dining room of the Coleman House for a fried chicken dinner. After the dinner, Dr. Clarkson was given a rousing reception, and responded most acceptably and entertainingly by a description of his journey across the Atlantic in the S. S. Empress of Scotland. Dr. Clarkson described the big boat as the tenth largest in the world. The return journey was somewhat marred by the presence of fog and ice, so that the big boat reached its destination four days late. Dr. Clarkson described very vividly his visit to King Tut's tomb, and other places of interest, and upon the conclusion of his talk distributed to all those present around the festive board coins as souvenirs from the different countries visited.

H. IRVIN EVANS, M.D., Reporter.

PHILADELPHIA

May 9th

Dr. T. McKean Downs: "An Interne's Thoughts on Medical Education."—Dr. Downs emphasized the importance of having in medical schools teachers who not only are well versed in their subjects, but who are able to impart their knowledge to the students. In addition, their moral character must be one of their strongest assets. A course of lectures might well be

added to link up the work of the first and second years with the clinical teaching, as is done for anatomy. Much more emphasis should be laid on internal medicine, while surgical clinics and most of the specialties should be greatly cut down. The average general practitioner needs to know medicine, pediatrics and obstetrics, and promptly forgets the other subjects taught in the undergraduate curriculum. He needs to know when an operation is necessary and when it is contraindicated, and not perfect operative technique. A specialist must take up postgraduate work in his subject before he is qualified to practice it anyway, and he would make a greater success if he were to spend his undergraduate days in receiving a better foundation in the fundamental principles of medicine, with more bedside work.

Dr. W. W. Palmer, Professor in Medicine, Columbia University: "Educational Problems in the Clinical Department."—The overcrowded schedules and long required hours prevent the student from becoming well grounded in any one subject. This leads to confusion, giving him knowledge of a few uncorrelated facts with no habits of correct thinking. The largest portion of time should be given to medicine, and in surgery to diagnosis rather than to the watching of operations, while the student should be stimulated to think for himself. It would be well to reduce the number of required hours to the minimum of thirty-six hundred, making the curriculum more elastic, and giving a better correlation of subjects. Greater use could be made of University methods of teaching, and an attempt made to attract the best minds into the profession, affording well-trained, stimulating leaders and teachers .

Dr. John H. Gibbon: "The Teaching of Undergraduates in Medicine."—Great changes have taken place in medical education in the last thirty years, and the present method seems to be the best. However, the object of turning out medical men should be borne in mind. It is a mistake to try to make all students research workers. All should have a good fundamental training, then clinical work. Some students do not even do an entire dissection. Many internes have no knowledge of fractures and their reduction, and must depend on the x-ray. A professor may be a research worker, but he must be a teacher, and teach the fundamentals and established knowledge. Many careers are spoiled by the lack of anatomy, chemistry, physiology and pathology. The hardest thing to teach is reasoning, but that is the prime essential. The bedside manner of teaching will not cover all cases, and cannot take the place of orderly systematic instruction.

Discussion by Dr. Alfred Stengel: Fundamental knowledge must be imparted of medicine and also of the science of medicine. Schools are hampered by State Board requirements. It is not fair to rural practitioners to leave all the specialties for postgraduate study. The question is what to teach, rather than who or how. Graduates prepared to practice must be turned out. Research ideas must be inculcated in some.

Dr. Thomas McCrae: Students should very early be shown the connection of physiological chemistry, for instance, with clinical work. Full-time teaching is a pure experiment. What is meant by University methods? Teaching is teaching. Students must be taught to think, and should have been done so before they reach medical school. Many of the specialties could be cut out. The general practitioner needs to know three or four things about the eye, which he could learn in one hour.

Dr. Hobart A. Hare: Students see patients in hospitals as cases without the human consideration, when diseases are in full fruition, instead of in incipiency. Full-time professors suffer from inertia due to lack of competition. Men are turned out who do not know the ordinary things everyone knows. They don't know, don't think, and possess only a mass of jumbled facts, not knowledge. We went to the legislature to have laws made, and now can't get them off the statute books. The average student is incapable of performing the laboratory technique of the specialist, and it is a waste of time to try to teach him. The first seed of medical investigation is planted in his soul when he thinks out something for himself.

Dr. W. Estell Lee: The public needs and demands that the physician have a knowledge of hygiene, therapy and nutrition. Familiarity with operative technique is not only a waste of time but dangerous, since the interne attempts tasks beyond him, when they look so simple. Laws can be changed if the profession wants them changed. Medical education has gone beyond the legislation that controls it, and the whole thing should be reorganized and restandardized.

Dr. Charles H. Frazier: There should be a correlation of theoretical and practical work in surgery, pathology and bacteriology. Major surgery should be regarded as a specialty. The student must know gallbladder disease, gastric ulcer, and how to reduce simple fractures. Instruction should not be dogmatic.

Dr. William Pepper: Unable to be present.

Dr. Richards: Reasoning, based on medical observation, is the greatest thing to teach.

Dr. Roberts: Students should learn to think in college, and go to medical college to learn to practice. Professors should be people who know how to teach. The danger in optional hours is that the student will pick out a little of this and that.

May 23d

Dr. David Riesman, president, in the chair.

Dr. D. J. McCarthy: "Migraine."—Migraine is not a disease but a symptom, and has a definite reason for its existence, an underlying pathology. Pain has a protective and conservative value, and is used to indicate this pathology. The usual treatment is to give one set of drugs for the pain and another set for the nausea, which merely mask the symptoms and do more harm than good. Dr. McCarthy discussed several cases selected from the large number he has treated during the last twenty years.

The first case was that of a woman of sixty-five, who, with a cardiorenal condition, arteriosclerosis and myocarditis, was in the habit of running up and down two flights of stairs about fifty times a day. Her headaches came on after social activities, and always began with gastro-intestinal disturbances. Treatment consisted in eliminating the matter of running upstairs. The second case was also diagnosed as a cardiorenal case. After six weeks in the hospital with treatment to increase the heart muscle tone, the headaches were under control.

The third was a mental or intellectual type of case. The patient was working under extremely high nerve tension, with intellectual ambitions that exceeded his abilities. He was advised to give up his ambition to become County Superintendent of Schools, and take up farming. The next case of migraine was due to a general endocrine disturbance, and was relieved by the administration of total ovarian extract, thyroid, and pituitrin. The fifth case also showed the relation between migraine and the pituitary and thyroid, and the relation between the condition of the heart muscle tonus and the control of the pituitary and thyroid. In another patient there was evidently a psychogenic factor to be considered. Another probably had some nose

and throat and sinus infection acting as foci. The last case discussed showed extensive arteriosclerosis of the brain at autopsy. Could the headaches have been caused by anemia, due to kinking of the blood vessels?

The various causes which underly the condition, then, may be disturbance of thyroid function, sex function, infection of sinuses, teeth, tonsils and mastoid, decreased physical tone, nerve exhaustion, organic visceral disease, high tension, bad hygiene of sleep, rest and exercise, and faulty metabolic function. Ninety per cent of the treatment is the diagnosis, and the causal factors should be removed if possible, or the life so adjusted as to compensate for irremovable conditions.

Discussion by Dr. McConnel: An interesting case was cited of a patient who suffered from intense headaches in the early morning, found to be due to his habit of sleeping with a cold draught of air striking his bald head. Migraine is interesting from its peculiar mode of appearance. In a very nervous individual, working under pressure, the headaches are a response to the intense nervous exhaustion of his manner of work.

Dr. Sherman F. Gilpin: "Sciatica."—Until the last decade sciatica was looked upon as a disease entity, but it is now considered as a neuralgia, with an interstitial neuritis as the underlying pathology. It is usually caused by poisons circulating in the blood, especially after the skin has been exposed to cold. Irritating pressure, muscular exertion, arthritis and syphilitic meningitis are often etiological factors. The most common symptom is pain and tenderness along the nerve trunk. Careful differential diagnosis must be made to determine whether the condition is primary or secondary, and the diagnosis of primary sciatica should be made only after everything else is excluded.

Treatment consists in rest in bed, the leg flexed at the knee, well padded and dressed with a splint or a plaster. Heat is applied along the course of the nerve. Iodids and salicylates are given in acute cases. The diet is nutritious and nontoxic. After the splint is removed, massage and electricity are employed. In chronic cases, stretching and injection of novocain and normal salt may be done, but prolonged rest will be more efficacious.

To sum up, after all primary causes have been eliminated, a few cases will be found to be due to exposure and the toxins of fatigue and exhaustion.

Discussion by Dr. McConnell: Sciatica is a symptom and not an idiopathic disease of the sciatic nerve. Other nerves are as vulnerable and exposed but are not so liable to infection. Intra- or extrapelvic conditions, sarcoma, sacroiliac disease, ischiorectal abscess, are all causes for trouble.

Discussion by Dr. W. J. Taylor: In a limited number of cases, the disease is a perineuritis, and is relieved by operation. There are three classes of cases, one free fom pain at rest, the second with intense pain on exercise, and the third with pain at rest but improvement on exercise. In the first, the inflammation will subside, but adhesions remain. The second may be relieved by operation, but the third will not.

Dr. Edward Martin: "The County Medical Society and the Public."—The county medical society is a power in society and may accomplish a great deal of good. It should be the dominant factor in any health program. An instance of what can be done by the society as an organized body is found in diphtheria. The press, pulpit and school, and labor organizations are being used to disseminate knowledge on this subject. The program takes in all civic organizations, and can reach every person in the state.

Dr. Maier: The president has taken up the matter of giving health talks on the radio every week.

Dr. F. Hurst Maier again read the report of the committee on "The Nursing Situation in Philadelphia."

A motion was made and carried that the committee be continued to formulate and carry out the recommendations made. A. R. WINTER, Reporter.

WESTMORELAND—JUNE

Held on the first Tuesday of the month the June meeting ran true to form as one of extreme interest. It is pleasing to report a continuation of healthy revival in the way of discussion, interest and attendance.

It was with a large measure of reluctance that the society decided to follow its usual summer routine and discontinue meetings until September. This proceeding was put across because of and partly compensated for by the passage of a motion inaugurated by Doctor Will of the Taylor family, to the effect that "we have one wild day of a picnic some time between the present and the date set for the first fall meeting." This coming event may or may not be officially reported to the JOURNAL.

Doctor Charles E. Snyder gave the society a ten minutes' dizzy dissertation on "The Place of Psychoanalysis in Medicine." His text was Brill's work, and he excited keen and general interest in his review of the book. Somehow C. E. S. took a lot of the foreboding fear away that has always surrounded this subject and he broadcasted a feeling among the hearers that an unarmed man with a bit of medical training might take a round or two any time with a subject that has been hitherto rather sidestepped. The writer is aware of two orders lately having been mailed the publishers for most recent editions of the work.

Of the Obers in our county registry there are two—Bert and Irwin. Heretofore the former—of Latrobe—has always represented the clan when it came to talking in meeting. Now the latter—of Greensburg—has cast his chapeau in the circle and has emerged as an embryonic adornment of the rostrum. And mark you, it was not an easy one that he picked either. If a sixth hour paper on "The General Uses of the Alkalies in Medicine" isn't about as hard as unquarried limestone, then deponent knoweth not. If it were not for the ever-tending formation of acid pathology in the human body, then it would seem that our preparations of the alkalies might be greatly lessened in number because of the lesser work required of them. His paper was an excellent appraisement of a class of hard-working, every-day line of medicines.

When Dr. J. Q. Lemmon is assigned a paper he well knows that we expect much of him and he always delivers no less than that amount to us. We are not yelling our heads off because of the great way in which he stuck to his subject, but we are wholly satisfied and devoutly grateful for the broad, happily worded paper he presented on "Diet in Skin Diseases."

The fourth ten-minute talk of the evening was given by Dr. B. M. Watkins on the subject, "Diet of the Infant up to One Year of Age." He gave a very interesting and instructive talk along the lines of simplified infant feeding as advocated by Dr. Dennett. Dr. Watkins is at home when it comes to a subject of this kind, for he takes particular interest in the troubles of the infant.

The papers were all freely discussed and all felt that it was an evening very profitably spent.

D. ALLISON WALKER, M.D., Reporter.
and T. ST. CLAIR, M.D.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. William K. Van Kirk, of McKeesport, aged 74 years, died on May 9th. He was graduated from Jefferson College of Philadelphia in 1873.

Dr. John Ricciardi, of Philadelphia, died on April 27th. He was born in 1863 and was graduated from the University of Naples, Italy, in 1888.

Dr. Effenger R. Kline, of Philadelphia, aged 69 years, died May 8th. He was a graduate of Jefferson Medical College of Philadelphia, class of 1882.

Dr. Jacob D. Moyer, of Wyomissing, aged 61 years, died on May 8th of cerebral hemorrhage. Dr. Moyer was a graduate of Jefferson Medical College of Philadelphia, class of 1886.

Dr. Henry F. Womer, of Johnstown, who was graduated from Jefferson Medical College, Philadelphia, in 1878, died April 29th following a long illness. He was 78 years old.

Dr. Edward Yarnall Rich, of Mechanicsburg, aged 45 years, died on May 6th. Dr. Rich was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1901.

Dr. Charles Sohn, who was graduated from Bellevue Hospital Medical College in New York in 1890, died May 22d, at his home in Pittsburgh, of pneumonia, aged 62 years.

Dr. Henry N. Dunnell, of Scranton, who was graduated from the Medical Department of the University of the City of New York in 1870, died suddenly in his office on April 25th, aged 83 years.

Dr. James M. Strohm, of Fredericksburg, aged 65 years, died on April 18th, of embolism. He was a graduate of the Medical Department of the University of the City of New York, class of 1881.

Dr. Fremont W. Frankhauser, of Reading, died suddenly in Philadelphia on May 23d. He was born in 1856 and was graduated from Jefferson Medical College of Philadelphia in 1880, and from the Medico-Chirurgical College of Philadelphia in 1888.

Dr. Alice Margaret Fasold, of Pittsburgh, aged 27 years, was killed May 31st when the automobile in which she was driving went down an embankment. Dr. Fasold was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1920.

Dr. Jacob R. Lehman, who practiced for many years in Mountville, died May 9th at his home, of heart trouble, after an illness of several months. Dr. Lehman was in his 69th year. He was a graduate of Jefferson Medical College of Philadelphia, class of 1882, and was at one time president of the Lancaster County Medical Society.

Dr. Ambrose J. Herr, of Lancaster, died suddenly, May 27th, of heart trouble. Dr. Herr was born in 1838 and was graduated from Jefferson Medical College of Philadelphia in 1861. He was a Civil War veteran and after the war took up the practice of medicine. He later became interested in banking and retired from active medical practice about 12 years ago.

Dr. Augustus Korndoerfer, one of the oldest physicians in Philadelphia and one of the founders of the Children's Homeopathic Hospital, died on June 12th, aged 80 years. He had been ill for several years. A widow, three daughters and two sons survive him. He was the first man to matriculate at the Hahnemann Medical College and was graduated from that institution in 1868.

While funeral services were being conducted for his brother in another part of the city, Dr. Jacob W. Shope, Civil War veteran, of Harrisburg, died at his home on the afternoon of June 14th. His death was the result of an attack of apoplexy sustained on May 26th. Dr. Shope was born in 1845. At the age of sixteen he enlisted in the Union Army and served throughout the Civil War. He was graduated from Jefferson Medical College of Pennsylvania in 1880, and following his graduation he located in Halifax, where he practiced for nearly half a century. When he moved to Harrisburg he became affiliated with the Polyclinic Hospital upon its organization, and was dean and chief of staff at the hospital when he died.

Dr. Charles Lincoln Furbush, Director of the Department of Health of Philadelphia, died at his home in that city on June 26th, following an illness of two weeks. He had been suffering from hardening of the arteries and high blood-pressure. Dr. Furbush was a recognized authority on sanitation and had been associated with General Gorgas, surgeon general of the United States Army, in the eradication of yellow fever and other tropical diseases in the Canal Zone.

Doctor Furbush was born in New York in 1863. He was graduated from the Medico-Chirurgical College of Philadelphia in 1893 and did postgraduate work in the Universities of Berlin and Heidelburg in 1894 and 1895. He was a military surgeon of wide experience, and had charge of sanitary and medical work in the Philippines, Cuba and elsewhere before taking up his work in Philadelphia. During the World War he volunteered his services with the American Red Cross and steadily rose in rank from a major to a colonel. In December, 1918, he was made a member of the Yellow Fever Commission of the Rockefeller Foundation to Central America. He visited Guatemala and Salvador, making extensive surveys and research. He was an authority on the prevention of tuberculosis, and introduced many measures for the prevention of the disease in Philadelphia.

ENGAGEMENTS AND MARRIAGES

Dr. Harry W. Baily, of Tamaqua, and Miss Mary Haldeman, of Reading, were united in marriage on June 21st, at Mt. Penn, Reading.

Mr. and Mrs. James T. Young, of Philadelphia, announce the engagement of their daughter, Miss Catherine Young, to Dr. Harry F. Gockley, of South Fork.

Announcement is made of the marriage of Dr. William Morton Kennedy, of Philadelphia, and Miss Dorothy Hilda Gerecke, of Scranton, on June 2d, at Philadelphia.

Mr. and Mrs. William M. Fahnestock, of Harrisburg, have announced the engagement of their daughter, Miss Katherine Vandevort Fahnestock, to Dr. Richard J. Miller, of Harrisburg. Miss Fahnestock, who is a graduate of Swarthmore College, has studied dramatic art in New York and Paris. Dr. Miller is a graduate of the University of Pennsylvania Medical School, and during the war he served overseas with the British forces in a medical unit.

Miss Miriam Galbraith Cocklin, daughter of Dr. and Mrs. Charles C. Cocklin, of Harrisburg, and Dr. Charles B. Fager, also of that city, were united in marriage at the Cocklin summer home at Heckton, on June 14th. The bride is a graduate of Hood College and has been employed as technician in the laboratory of the Harrisburg Hospital. Doctor Fager is a son of Dr. and Mrs. V. Hummel Fager, of Harrisburg, and is associated with his father in the practice of his profession.

ITEMS

Dr. Mary J. Baker, of New Castle, has been elected by the school board as school physician for the ensuing year.

Dr. J. C. Biddle, of Ashland, has tendered his resignation to the Governor as superintendent of the Ashland State Hospital.

Drs. Horace C. Kinzer and Clarence R. Farmer, of Lancaster, spent ten days recently at the Mayo Clinic, Rochester, Minn.

Drs. G. A. Poust, of Hughesville, and J. F. Gordner, of Montgomery, have returned from Chicago, where they were doing postgraduate work.

Dr. F. D. Kilgore, of Harrisburg, recently attended the twenty-fifth reunion of his class at the University of Pennsylvania, Philadelphia.

Dr. and Mrs. Frederick Fraley, of Norwynden, Merion, have left for Northeast Harbor, Me., where they will occupy their cottage for the season.

DR. J. B. LOWMAN, of Johnstown, Treasurer of the State Society, has returned from a trip around the world. He left Johnstown last January.

DR. J. NORMAN WHITE, of Scranton, is on an extended trip through the South and Middle West and attended the meeting of the Kiwanis Club at Atlanta, Ga.

DR. AND MRS. ISAAC STARR, JR., of Cresheim Valley Drive, Chestnut Hill, are receiving congratulations upon the birth of twins, a son and daughter, born on May 30th.

DRS. T. KENNETH WOOD, of Muncy; W. E. Turner, of Montgomery, and Irvin T. Gilmore, of Picture Rocks, are in Boston doing postgraduate work at Harvard University.

DR. AND MRS. J. GIBSON LOGUE, of Williamsport, spent some time during May in New York City, where Dr. Logue attended childrens' clinics at the New York Postgraduate Hospital.

DR. AND MRS. C. A. R. MCCLAIN, of Mount Union, recently witnessed the graduation of their son, Fred Hunter McClain, at the School of Dentistry of the University of Pittsburgh.

DR. H. B. DAVIS and family, of Lancaster, will spend the summer on their houseboat, which they have at Riverton, N. J. Dr. Davis will attend the Postgraduate School at the University of Pennsylvania during the summer.

DR. LUTHER C. PETER, Philadelphia, was a guest of the Eye, Ear, Nose and Throat Section of the Canadian Medical Association at its recent meeting in Montreal, and presented a paper on "The Practical Value of Modern Perimetry in Diagnosis of Disease of the Visual Pathway."

DR. J. A. C. CLARKSON, Secretary of the Mifflin County Medical Society, who has been abroad for four months, and Mrs. Clarkson, who has been to Niagara Falls and Quebec, were recently guests of the Rev. Dr. and Mrs. D. N. Miller, of Harrisburg. They have returned to their home in Lewistown.

DR. WILLIAM L. CLARK announces the opening of a private hospital for the study and treatment of neoplastic diseases at 2215 Walnut St., Philadelphia. The staff will consist of Drs. William L. Clark, Harvey M. Righter, J. Douglas Morgan, Eugene J. Asnis and Arthur W. Goodspeed (Ph.D.), in coöperation with qualified consultants.

DONALD OENSLAGER, of Harvard University, son of Dr. and Mrs. John Oenslager, of Harrisburg, was recently graduated with "cum laude" honors. Mr. Oenslager has been awarded the Sachs Fellowship of $2,000 and is the youngest man who has received this honor. He will sail in September for a year's study in Europe of theater and stage settings.

DR. OMER R. ETTER, who has been located at Warrensville for the last three years, left for Boston recently to do some postgraduate work at Harvard University, after which he will spend some time at a postgraduate school in New York City. After completing his work in New York, Dr. Etter will return to his native state, California, and there resume the practice of medicine.

THE DEAN of the Jefferson Medical College announces the election of Dr. Bowman C. Crowell, of Charleston, S. C., as Professor of Pathology to succeed to the position formerly occupied by Dr. William M. L. Coplin, who resigned a year ago. Professor Crowell is a native of Nova Scotia, a graduate of the Academic and Medical Departments of McGill University, and has had a wide experience as teacher, pathologist and investigator.

MISS ISABELLE FUSSELL, daughter of the late Dr. M. Howard Fussell and Mrs. Fussell, of Germantown, was the outstanding figure in the fifty-first annual commencement at Swarthmore College. Upon her was bestowed the highest honor that a woman student can receive, the award of "The Oak Leaf." This is the second time the honor has been given. It is presented by the faculty to that woman member of the senior class who is outstanding for loyalty, scholarship and service.

DR. EDWARD E. MONTGOMERY, of Philadelphia, will retire from active practice this summer, after 50 years' service in the medical profession. He will start next September on a tour around the world, which will continue until 1926, the year of the Sesquicentennial Exhibition. It is his intention to speak in the interest of the Sesquicentennial in the various foreign lands he purposes to visit, as it is his opinion that the exposition would be of great value not only to the people of the United States, but also to the peoples of the entire world.

FOUR MORE APPOINTMENTS have been made on the teaching staff of the Woman's Medical College of Pennsylvania, Philadelphia, to fill vacancies created in the recent clash between the staff and corporators of the Institution. Dr. George M. Dorrance, who is on the teaching staff of the University Hospital, has accepted the chair of surgery; Dr. Joseph C. Doane, medical director of the Philadelphia General Hospital, is to be clinical professor of medicine; Dr. Elizabeth Dixon Wilson will be director of laboratory hospital work, and Dr. H. Evert Kendig has accepted the chair of pharmacology and materia medica.

AT THE CALL of Dr. Chas. Miner, State Secretary of Health, a meeting was held on June 21st at the State Capitol, Harrisburg, to organize for an educational campaign to encourage annual health examinations. The campaign has been initiated by the National Health Council, and is to be launched on July 4th, the nation's birthday. The slogan is: "Have a Health Examination on Your Birthday." All agencies operating in the cause of public betterment are asked to coöperate.

Dr. Miner presided, and after stating the subject for consideration, introduced the following speakers: Dr. Edward Martin, Chairman of the Committee on Public Relations of the State Medical Society; Dr. Elizabeth Bricker, of the Department of Labor and Industry; Dr. Turnbull, Deputy Secretary of Health; Dr. H. C. Frontz, President-Elect of the State Medical Society; Dr. C. Waldo Cherry, Pastor of Pine Street Presbyterian Church of Harrisburg; Mr. Rule, Deputy Superintendent of Public Instruction; Dr. Miller, of the Department of Health; the Chairman of the Committee on Public Relations of the Rotary Club of Harrisburg, who read the Rotary Club plan for Harrisburg; Miss Margaret Dunlap, President of the Graduate Nurses Association of Harrisburg, and a number of others, all of whom pledged coöperation of the organizations they represent.

The large audience present was formed into a State Committee to push the campaign, and Dr. Miner was empowered to appoint an Executive Committee of five to formulate detailed plans, reporting to the General Committee. Harrisburg and Allentown were chosen for a special effort for the next several years, after which the meeting adjourned.

If the present alarming proportion of automobile accidents continues, we will soon see a hospital in connection with every service station. Perhaps a national campaign would help, with a liberal use of the slogan, "A doctor in every service station."

If competition is the life of trade, we had better subsidize the Osteopaths, Chiropractors, Christian Scientists and patent medicine vendors.

They say Americans eat too much; but if we are going to save on both grocers' bills and doctors' bills, what are we going to do with all our money?

The best sedative we know is a day spent in the woods fishing, listening to the song of the brook and the hushing rustle of the trees; resting both soul and body, where the telephone ceases to bother, and the automobile ain't.

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

THE NATURE OF THE COMPLEMENT FIXATION REACTION IN SYPHILIS IN RELATION TO THE STANDARDIZATION OF TECHNIC*†

JOHN A. KOLMER, M.D.

PHILADELPHIA, PA.

The literature upon the Wassermann and other serum reactions in syphilis has become so voluminous and the subject has been discussed so frequently and with such detail, that it would appear almost superfluous to devote more time to it. On the other hand, syphilis is so widespread and of such high economic importance, is so likely to be encountered in every specialty of medical practice, and may so easily escape clinical detection in certain stages, that the subject is one of universal interest and great importance, and improvements in our aids to diagnosis are to be welcomed. No other strictly laboratory test has been more used and abused, lauded and condemned and frequently misunderstood than the Wassermann test; yet its intrinsic worth has enabled it to weather all storms so that it probably stands to-day, potentially at least, the most important single laboratory procedure, full of possibilities for great good when properly conducted and interpreted, but of even greater possibilities for harm when technically incorrect and misunderstood.

The Proper Function of the Complement Fixation Reaction in Syphilis.—Syphilis in its first and especially in its later manifestations may so readily engage attention in every specialty in medicine that all physicians must expect to encounter it in their practice. Specialists are usually highly skilled in detecting the disease when it involves their particular domain of work, but in its later stages with varied clinical manifestations the disease may easily escape detection by the general practitioner. In its latent stages it may escape diagnosis by even the most skilled physician, as likewise the atypical case with a negative or indefinite history. The complement fixation test in order properly to fulfill its function must prove of most aid under these conditions—not to replace clinical acumen and judgment, but to furnish an additional and accurate means of diagnosis of the clinically difficult, doubtful or unsuspected case. When and where clinical skill is least, reliability of the serum test should be greatest, and for this reason the technic is deserving of more attention as part of the nation-wide movement for the diagnosis and thorough treatment of syphilis.

Probably with the majority of physicians the Wassermann test is acceptable only as confirmatory evidence of syphilis. Many are unwilling to ascribe any significance to the reaction in either a positive or negative way unless the result meets with their clinical expectancy. Doubtless not a few have been forced into this attitude by actual experience. I believe, however, that it is possible to avoid technical errors and greatly improve the diagnostic status of the test and that it should be the aim and purpose of serologists to evolve a test capable of correctly detecting the disease when this is not possible by clinical means; to me the complement fixation test fails in its ultimate mission and purpose if it fails to do so. I believe that falsely positive reactions are most likely to be caused by technical errors and that, as in other branches of medicine, skill and experience are required to reduce their incidence to a minimum. I believe that with improved technic the incidence of falsely positive reactions will be negligible because there is no biological reason for their occurrence in any nonsyphilitic disease other than frambesia tropica. Falsely negative reactions however, will probably always occur for biological reasons, because no matter how sensitive a test may be made, it cannot detect in the serum or spinal fluid something that is practically absent, and it would appear that in some cases of latent syphilis the activity of spirochetes is so slight or their numbers and virulence so reduced, that demonstrable amounts of "reagin" are not produced.

I trust that this high ideal of the complement fixation test in syphilis is justifiable. According to my own observations and experiences I believe it is, although I admit that the full possibilities of the test are realized only by close co-

*Read by invitation before the Medical Society of Delaware, Dover, October 10, 1922.

†From the Dermatological Research Institute of Philadelphia and the Department of Pathology and Bacteriology of the Graduate School of Medicine of the University of Pennsylvania.

öperation between clinician and serologist or by him who possesses training and experience in both branches.

NATURE OF THE COMPLEMENT FIXATION REACTION IN SYPHILIS.—The complement fixation reaction occupies a very unique position among immunological phenomena. At first regarded as a specific reaction, it is now known to be biologically nonspecific, but in most parts of the world this does not seriously reduce its diagnostic value in syphilis because the peculiar antibody-like substance to be found in the blood or spinal fluid or both, and responsible for the reaction, is known definitely to occur only in syphilis and frambesia tropica or yaws.

Infection with spirochetes of these two diseases results in the elaboration of a substance aptly called "reagin" by Neisser, which has the property of uniting or reacting with certain lipoidal substances, the resulting complex regarded as a precipitate by some investigators, being able to absorb or fix hemolytic complement in the test tube. This "reagin" is probably produced by the cells directly in contact with and stimulated by the spirochetes; it is first found, therefore, in the tissue juices of the chancre, as recently shown by Klauder and myself. As the spirochetes are disseminated through the body the tissues of various internal organs, including those of the brain and spinal cord, very probably participate in the production of this Wassermann substance or "reagin." Even the cells of the cardiovascular system may participate in the process, as likewise the lymphocytes and other cells of inflammatory stimulation surrounding the nests of spirochetes. It may be that the lipoids of spirochetes are antigenic and induce the production of the "reagin," but so far all attempts to produce antibodies with pure lipoids have failed, and even if it were true, one would expect a certain degree of specificity on the part of these lipoids, which has not been demonstrated. This view does not coincide with our present conception of the tissues usually concerned in antibody production in infectious diseases, but there are no valid reasons for regarding this cellular "reagin" as a true antibody. In the first place the amount to be found in the body fluids bears a more or less direct relation to the severity of infection, although this relation may not be clinically apparent if the spirochetes are active in tissues of minor physiological importance. In the second place it may be present during the latent or resting stages of the disease in such small amounts as to escape detection, whereas if it were a true antibody capable of forcing the spirochetes into these periods of latency, it should be demonstrable in large amounts. For these and other reasons the complement fixation reaction is to be regarded as an index of the degree of infection rather than of immunity, and if this is true, the phenomenon is unique, not only for this reason but likewise because of the pecular nature of the "reagin."

This "reagin" has the power of fixing complement in the presence of a suitable suspension of lipoids. It is probably not itself a lipoid or identified with the lipoid content of serum or spinal fluid, although this phase of the subject is by no means a close chapter and requires further investigation.

THE PRACTICAL SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN SYPHILIS.—The important practical question is, may similar cellular "reagins" be produced in diseases other than syphilis and frambesia, capable of bringing about the physio-chemical phenomenon of complement fixation in the presence of extracts of lipoids? Do the positive Wassermann reactions which have been recorded as occurring in leprosy, diabetes mellitus, during the febrile stages of malaria, typhoid fever, pneumonia, late pregnancy, and so on, answer the question affirmatively? When one remembers the many chances of technical error capable of involving every important element and phase of the test, the answer must be given with great caution. Furthermore, may not pregnancy, an intercurrent infection, a metabolic disease and so on stimulate latent foci of syphilitic spirochetes into activity, with the production of "reagin," just as trauma may possibly be provocative or stimulating?* I am sure that this question of nonspecific reactions cannot be answered by a mere review of the literature upon the Wassermann reaction in nonsyphilitic diseases because too much of it has been built upon obvious technical errors. Neither do I disclaim the possibility of observing positive complement fixation reactions with a correct and acceptable technic in nonsyphilitic diseases, but I do know that the clinician is not always infallible in his judgment, that syphilis can escape clinical detection and that these unexpected positive reactions are not always due to laboratory error. My question remains, is a "reagin" similar to that produced in syphilis and frambesia, or a physico-chemical alteration of the blood and spinal fluid similar to that occurring in these diseases, to be found in other infectious and noninfectious diseases? A final answer cannot be given, as the subject requires further investigation, but if I may be permitted to express a prediction, I believe that the answer will be negative and that as clinical and patho-

*A recent paper by Klauder on Syphilis and Trauma (Jour. Amer. Med. Assoc., 1922, 78, 1029) is very instructive in this connection and answers this question affirmatively.

logical knowledge of syphilis is developed, and more especially as our complement fixation technic is perfected, more and more emphasis will be placed upon what may be called the "syphilitic significance" of these unexpected and weakly positive reactions with the sera of individuals regarded tentatively as nonsyphilitic.

A source of clinical error worthy of keeping in mind is that a positive Wassermann reaction does not necessarily mean that a particular lesion is syphilitic. For example, a tuberculous ulcer may occur in the larynx of an individual with latent syphilis and fail to improve with antiluetic treatment. On the other hand the complement fixation reaction may yield falsely negative reactions, and not a few physicians regard the test as insufficiently sensitive.

Biologically Falsely Negative Reactions and the Necessity for a Sensitive Test.—These false reactions may be due to the presence of insufficient amounts of "reagin" in the blood or spinal fluid or to technical errors. The mere fact that a person is known to have contracted syphilis does not necessarily mean that the "reagin" is present in detectable amounts. There must be a certain degree of spirochetic activity and doubtless numbers of spirochetes, and their virulence and location in the body are important modifying factors. Warthin has shown that spirochetes may exist in the tissues with practically no inflammatory reaction and under these conditions "reagin" production must be very slight.

Therefore the technic of the complement fixation reaction in syphilis should be as sensitive *as is possible with specificity*. Every serologist knows that the test may be rendered so delicate as to incur the risk of nonspecific reactions, but the harmfulness of these is so apparent that they are not included in the present discussion. Whether or not cases of latent syphilis unexpectedly detected by the complement fixation reaction, are subjects for mild, moderate or intensive treatment is likewise aside from the present discussion. There ought to be, however, no difference of opinion on the desirability of having a complement fixation test as sensitive as is possible with practical specificity, in order to avoid falsely negative reactions and especially when the test is employed as a guide to treatment to avoid the regrettable error of undertreating the disease. Even under these conditions we will continue to secure falsely negative reactions for the very good biological reason that where "reagin" is practically absent from the serum and spinal fluid it cannot be detected in the test tube. In connection with this subject of biologically falsely negative Wassermann reactions it is worthy of remembering that while "reagin" may not be present in detectable amounts in the blood, sufficient may be present in the spinal fluid to yield positive reactions. The reason is unknown. It may be that in these cases the spirochetes are mainly located in the tissues of the brain and spinal cord and that the "reagin" produced by these tissues finds its way into the spinal fluid, where it may be detected in smaller amounts than is possible in the serum because five to ten times more spinal fluid may be employed in the Wassermann test than is permissible with serum. I believe this to be the principal reason, but in addition it may be that some of the "reagin" is filtered out of the spinal fluid during its reabsorption into the lymphatic and vascular systems.

Studies in the Standardization of Technic.—During the past six years my colleagues and I[1] have been actively interested and engaged in a series of investigations aiming to study every phase of complement fixation in syphilis for the purpose of building up a test possessing a maximum degree of sensitiveness with the minimum possibility for yielding nonspecific reactions. I realized that the task was big before a start was made, but did not conceive that it would require the very large amount of work that has been done. As our investigations proceeded it became evident that every detail, regardless of how trivial it may at first appear, was worthy of careful study. My associates and I have striven always to conduct the work without preconceived ideas and without bias. It can scarcely be hoped or expected that we have escaped technical errors and erroneous conclusions, but we have faithfully described what we have done and what we have observed. These investigations have finally enabled us to build up a new complement fixation test for syphilis which I hope others will find as satisfactory as ourselves and that clinicians and serologists will at least consent to give it a fair trial alongside of their own technic.

Standardization of the complement fixation reaction has been discussed and if accomplished may yield certain advantages. For example, it would enable a closer analysis and evaluation of different kinds and methods of treatment, and greatly increase the confidence of the medical profession as a whole in the test as an aid in the diagnosis of syphilis.

Doubtless many physicians have had the unhappy experience of securing varying reports on the Wassermann reaction with portions of the same blood sent to different laboratories. This is regrettable but not altogether unexpected, when one remembers the great influence of tech-

nic upon the reactions and the numerous modifications being practiced. Standardization of technic would aim to correct this situation, but it is easy to fall into the error of making the "remedy worse than the disease." For example, if it were desired simply to unify the results in so far as positive or negative reactions were concerned, a simple modification of the original Wassermann reaction could be made to fulfill the requirement. In other words, by adopting a technic capable of detecting only relatively large amounts of "reagin" the weekly positive or doubtful cases which constitute those giving varying results, would be weeded out by giving negative reactions. Only gross technical errors would interfere with uniform results under these conditions, but is such a reaction worth while? Are not the truly syphilitic cases in the latent stages worthy of detection even though antiluetic treatment may not be given? Should not a reasonable attempt be made to make treatment as thorough as possible? When treatment is being guided by the complement fixation reaction, should not the test be made as sensitive as is possible with practical specificity, in order that a truly positive reaction may be the last symptom to disappear and the first to return if complete sterilization has not been accomplished?

I have not called our new test a standardized test because it must earn that designation by common consent. But experience with it has been favorable, and I am hoping that it may, at least, prove a starting point toward the adoption of a standardized technic. A new antigen and many technical improvements have been included, to give the technic five qualifications as follows: (1) As high degree of sensitiveness as is permissible with practical specificity; (2) technical accuracy and uniformity in results, in so far at least, as positive or negative reactions are concerned (slight variation in the degree of positiveness will occur but these do no harm as long as the primary question of whether a serum does or does not yield a positive or negative reaction is answered); (3) yield a truly quantitative reaction in order to give an index of spirochetic activity and the influence of treatment; (4) be technically simple in order to reduce the minimum of error, and (5) economical of time and materials in so far as this is consistent with the best work. Simplicity is but a relative term. For the inexperienced any technic is apt to be complicated, but for the experienced my new test is simple. It is not a short cut method and has never aimed to be, because too many sources of error require attention and correction to fulfill the primary aim of sensitiveness and specificity.

The new complement fixation test for syphilis has aimed to meet these requirements as follows, a fuller discussion and all technical details being given elsewhere[2]:

I. *The requirement of sensitiveness* by the following procedures:

(a) By using a highly sensitive antigen.

(b) By using relatively large amounts of antigen.

(c) By using relatively large amounts of serum and spinal fluid.

(d) By heating sera for only fifteen minutes at 55° C. instead of for thirty minutes.

(e) By using a mixture of guinea pig complements prepared in a manner tending to increase sensitiveness to fixation.

(f) By mixing serum and antigen for a brief period before the addition of complement.

(g) By using a primary incubation of fifteen to eighteen hours in a refrigerator at 6° to 8° C. plus ten minutes in a water bath.

(h) by close adjustment of the hemolytic system.

(i) By using an anti-sheep or anti-ox hemolytic system, although the test can be conducted with an anti-human system.

(j) By reading the reactions within three hours after the conclusion of the secondary incubation.

II. *The requirement of practical specificity* by:

(a) Close adjustment of the hemolytic system to a primary incubation of fifteen to eighteen hours at 6° to 8° C.

(b) Careful titration of antigen under conditions rendering the dose employed suitable for this kind of primary incubation.

(c) Including numerous and adequate controls.

III. *The requirement of technical accuracy and uniformity in results* by:

(a) Adopting the principle that pipetting relatively large amounts of fluid (0.2 to 1 c.c.) tends to greater accuracy than measuring smaller amounts (less than 0.2 c.c.).

(b) Using a total volume of 3 c.c. with sufficient corpuscles and test-tubes of suitable size to yield clear, sharp, and easily read reactions.

(c) By using a reading scale prepared each time the tests are conducted and with the same reagents.

IV. *The requirement of a true quantitative reaction,* so important in connection with the use of the complement fixation test as a guide and control in treatment, has been met by working out a series of five dilutions of patient's serum and spinal fluid which may be set up rapidly and accurately.

V. *The requirement of simplicity* has been met in so far as experienced serologists are concerned. Simplicity is but a relative term, inasmuch as the simplest technic is a complicated problem for the inexperienced and insufficiently trained worker, whereas a more complicated technic is perfectly simple to the experienced serologist. I am quite sure that my new test can be satisfactorily conducted by any person possessing a working knowledge of the technic of complement fixation.

VI. *The requirement of economy* has been met in so far as materials are concerned; in regard to time the new test is not a short cut method and is not shorter than other methods in general use.

A few lines may be added on the subject of uniformity in results. It must be emphasized that the anticomplementary activity of serum or spinal fluid is very important in relation to reactions, and for this reason tests conducted with portions of the same specimen of blood in different cities cannot be expected to yield absolutely similar results, nor even in the same city, if serologists vary in their methods of preserving blood until the tests are conducted.

Two or more serologists working in the same or different laboratories testing portions of a sample of blood or spinal fluid from one person should agree at least upon the question of positive or negative reactions. In my experience most variation occurs with sera yielding weakly positive or borderline reactions. Slight discrepancies in the reports on the degree of complement fixation must be expected, inasmuch as the personal equation plays an important part in reading the degree of hemolysis, as it does in matching colors in other lines of work. Slight discrepancies of this kind do no harm as long as the primary and fundamental question of whether a serum does or does not yield a positive or negative reaction is untouched, and particularly with sera yielding borderline results.

IS STANDARDIZATION ADVISABLE AND POSSIBLE?—Standardization is desirable if these aims are served and satisfied: The first purpose should be to secure as good a technic as is possible to evolve in the light of our present knowledge. Mere unification of results in Wassermann tests in different laboratories means little or nothing unless the test is technically correct and as sensitive as is possible with practical specificity. Even under these conditions individual variation in the scientific attainments and accuracy of different serologists will ever be modifying factors, if the test aims to be a sensitive one, but I believe standardization is possible under these conditions and my own efforts have been and will continue to be dedicated to that end.

1. Series of thirty-two papers being published in the Amer. Jour. of Syphilis, beginning 1919, vol. 3, p. 1.
2. Kolmer, J. A.: A New Complement Fixation Test for Syphilis Based Upon the Results of Studies in the Standardization of Technic. Amer. Jour. Syph., 1922, 6, 82.

DISCUSSION

DR. J. A. ELLEGOOD (Wilmington, Del.): May I ask Dr. Kolmer if you would get a positive Wassermann reaction in Vincent's angina?

DR. KOLMER (in closing): Regarding the question of Dr. Ellegood concerning the Wassermann test in Vincent's angina, I may state that in my experience the reaction has always been negative. It is reasonable to expect, in nonsyphilitic spirochetic infections, as Vincent's angina and infectious jaundice, that positive reactions may be found, as is true in frambesia tropica, but practically this is not the case. In those localities where frambesia does not occur, as in the United States, the Wassermann reaction is practically specific for syphilis, although a review of the literature indicates that positive reactions have been described by some one at some time in practically all diseases to which human flesh is heir. In my opinion these positive reactions in nonsyphilitic diseases are largely due to error in technic. However, it is to be borne in mind that in any Wassermann survey of a large number of supposedly nonsyphilitic individuals, a few cases of unrecognized congenital syphilis may be encountered, yielding true positive Wassermann reactions.

EDITORIALS

THE SWEET GIRL GRADUATE

This is the season of the sweet girl graduate. Just why they should all and always be styled sweet is not within our ken, but since some romantic boob in the dim, undiscerning past started the chroniclers off in this vein, we will, with our total lack of originality, have to keep up the expression. And we do this gladly, for in sooth, are they not all sweet? Yea, verily, brother, they are. Now do not be mistaken as to just to whom we refer—it is to the nurses, of course! We have attended their commencements recently, and have been impressed more than ever with the appropriateness of the above appellation. No college graduates in their caps and gowns look half so sweet, so human, or so altogether likable, as do the nurses in their spotless uniforms.

But we are impressed with the further fact that, with few exceptions, the classes that are being graduated are not increasing in size; some of the schools are holding their own, but some others are actually giving to the community a smaller number of graduate nurses than they did even in the dark days of the war period. There are various reasons for this, some of national operation and some of purely local concern. It is not our intent at this time to discuss these

reasons; nor the effects. But while the graduating season is fresh in our minds we wish to make a suggestion, not original with us, as to the commencement in Wilmington next year.

The classes that are being graduated from each of the three local hospitals seldom number more than eight or nine, and the total receiving diplomas in any one year seldom exceeds thirty. With three commencements for three institutions, but with only thirty, or less, nurses, we are, it strikes us, pursuing a wasteful policy, and we would suggest that next year there be a combined commencement. This would make a distinct innovation in this city, but one that we feel sure would be well received by the public, by the institutions, by the medical profession, and especially by the nurses themselves, for whom the exercises are given.

This suggestion is made here because there are always some who oppose any change in a given routine, especially if the change is proposed suddenly. With a year to think it over, we can safely assume that any opposition to such a plan can be met; in fact, those to whom the matter has been mentioned have received it as a welcome improvement. Certain it is that the physicians should approve any plan that can save the hospitals money, however little, and at the same time present before our public a function distinctly superior to any similar one in the past.

W. E. B.

PHYSICIANS IN PUBLIC OFFICE

With the recent election of Dr. G. W. K. Forrest as mayor of Wilmington, and the coming appointment by the Governor of four physicians to serve on the newly created Commission of Public Health and Welfare, the medical profession in Delaware is given a wonderful opportunity for public service. Doctors, more than any other professional men, enjoy a personal following, and when that is capitalized into political advantage, they are sure to win out in a political fight.

Yet, it is seldom that the doctor in office takes advantage of his position to give to the community the benefits of his special training. It would seem that with a physician at the head of a city government, for instance, the greatest impetus would be given to all matters pertaining to public health. The sanitary conditions of the city, the hospitals, clinics, medical inspection of the schools, the milk supply, etc., are as a rule dominated by lay interests. Yet, as likely as not a doctor-mayor will devote his energies to the business side of his administration, a side with which he is most familiar, and for which he is the least equipped. No wonder the public is at a loss to know why physicians should be elected to public office, when they are such poor business men.

We congratulate Dr. Forrest on his election and trust that he will establish an enviable record for himself by doing the things which his training will enable him to do best.

A. R.

DELAWARE NEWS ITEMS

A SET OF NEW and enlarged sterilizers is being installed in the Homeopathic Hospital, Wilmington.

DR. AND MRS. WILIAM F. BONNER, Wilmington, are leaving for a trip to the Coast and to the Convention. They will be gone about four weeks.

DR. RICHARD R. SPAHR, who has been associated with Dr. Dorsey W. Lewis, Middletown, Del., for four years, has gone to Mechanicsburg, Pa., to practice.

A SON WAS BORN to Dr. and Mrs. Joseph S. McDaniel, of Dover, at the Jefferson Hospital, Philadelphia, on May 16th.

DR. JAMES MARTIN, of Magnolia, has been appointed by the Governor a member of the newly-created State Department of Supplies.

MRS. JEROME D. NILES, wife of Dr. J. D. Niles, of Townsend, has returned home from the Polyclinic Hospital, Philadelphia, where she underwent a successful operation.

DR. AND MRS. EDWARD M. VAUGHAN, of Middletown, are in attendance at the A. M. A. Convention in San Francisco. They will visit Denver, Portland, Seattle, and the Canadian Rockies before they return.

NEW LECTURE, class, and demonstration rooms for the nurses have been opened at the Delaware Hospital, Wilmington, making a very distinct addition to the equipment of this institution.

DR. J. CARDEEN COOPER, of Dover, seriously injured his right foot, necessitating a week's rest, by having a large box of drugs fall upon it. Taking his own medicine, as it were!

RAPID PROGRESS is being made in the construction of the new St. Francis Hospital, Wilmington. The excavating has been finished, and the foundations and walls are now up half-way to the second floor. The building will care for sixty patients.

DR. J. B. DERRICKSON, of Frederica, who has had a severe attack of blood poisoning, due to an infected cut of the foot, has returned from a rest in the pine belt of the Carolinas, and is back at his work, much improved.

DR. AND MRS. W. OSCAR LAMOTTE, Wilmington, are leaving for a six weeks' trip to the Pacific Coast, where Dr. LaMotte will be the delegate from the Medical Society of Delaware to the Convention of the A. M. A. A visit will be paid also to Dr. LaMotte's brother in Los Angeles, who is an occulist.

REV. FRANCIS DOWNS, son of Dr. Presly S. Downs, of Dover, officiated at the laying of the corner stone of the new Presbyterian Church, at Dover, as well as making the official address on that occasion. Dr. Downs is the proud parent of four sons, all of whom have attained positions of honor in their various professions.

DR. W. T. CHIPMAN has been elected president of the newly organized Chamber of Commerce of Harrington. Harrington is the railroad center of southern Delaware; the Pennsylvania Railroad car shops and repair centers, etc., are located there. It is a live town, and Dr. Chipman must be a real "live wire" to be elected head of its business forum.

The Milford Emergency Hospital, Milford, Delaware, has installed a 1923 Complex Victor X-Ray Machine, a gift of the Caulk Company. Dr. W. R. Pierce, who served as roentgenologist in the Canadian Army during the war, having been transferred from the U. S. Army, Medical Department, is in charge of the x-ray work. The machine is the best in the market and Kent County can now boast of having the most thoroughly equipped x-ray service in the state.

Considerable changes are being made to the interior of the Physicians' and Surgeons' Hospital, Wilmington. The two operating rooms, which were small, are being combined into one room. A new room for minor surgery and accident cases is being made on the first floor. The delivery room has been entirely renovated. Two new diet kitchens are being built on the second and third floors, and new laboratory, pharmacy, and nurses' class and demonstration rooms in the basement. These changes will add considerably to the effectiveness of the hospital.

The U. S. Prohibition Boss, Commissioner Haynes, visited Delaware last month and published the news that the state of Delaware was "bone dry," and also the "driest state in the Union." We are all very glad to learn just exactly "how dry we are," but if our little state is as dry as the honorable gentleman says, every "dry" citizen in all the other states in our dear United States must be wearing bathing suits, for surely the moisture must be up to their necks. Please page Prof. Howard A. Kelly and the Rev. Carlisle Hubbard!

GENERAL NEWS ITEMS

Dr. William J. Mayo, of Rochester, Minn., received an honorary degree of doctor of laws from McGill University on June 11th.

Under the auspices of the Ernst Fuchs Society, the Colorado Ophthalmological Society and the Colorado Otolaryngological Society, a graduate course in ophthalmology and otolaryngology will be held in Denver, July 16 to 28, 1923. There will be daily illustrated lectures, clinics, demonstrations and conferences.

The Seventy-ninth Annual Meeting of the American Psychiatric Association, was held at the Hotel Statler, Detroit, Michigan, June 19, 20, 21 and 22, 1923. Dr. H. W. Mitchell, a member of the Board of Trustees of the Medical Society of the State of Pennsylvania, was president of the Association during 1922-1923.

In connection with the San Francisco meeting of the American Medical Association the American Society for the Control of Cancer provided several additional features. A dinner conference for cancer workers was arranged on June 28th for the purpose of discussing mutual problems and exchanging ideas. The Society also accepted space in the Scientific Exhibit, where a new hand-done exhibit was shown for the first time. The Cancer film, "The Reward of Courage," was shown several times on the motion picture program, and a big public cancer meeting was held on June 24th under the joint auspices of the American Medical Association, the California State Medical Society, and the American Society for the Control of Cancer.

United States Civil Service Examinations.

The United States Civil Service Commission announces the following open competitive examination for Junior Pathologist:

The examination will be held throughout the country on July 25th. It is to fill a vacancy in the Bureau of Mines, Department of the Interior, for duty at Pittsburgh, Pa., at an entrance salary of $1,500 a year, plus the increase of $20 a month, and vacancies in positions requiring similar qualifications.

The duties are to secure by necropsy, specimens of tissue of animals and men, to fix, imbed, section, and stain same and make interpretation of pathological findings. The appointee will be required to carry out routine bacteriological examinations, including growth on culture media, animal inoculation, and recognition of organism; and to assist in investigative and research work being carried out in relation to health hazards in mining and allied industries.

Competitors will be rated on practical questions, and education, training, and experience.

The United States Civil Service Commission announces the following open competitive examination for Junior Medical Officer (Pathologist), $2,000 a year, and Junior Medical Officer (Assistant Anesthetist), $1,000 a year:

The receipt of applications will close July 24th. The examination is to fill vacancies in Freedmen's Hospital, at Washington, D. C., and vacancies in positions requiring similar qualifications. In addition to the basic salary appointees may be allowed the increase of $20 a month granted by Congress.

Applicants must have graduated from a medical school of recognized standing, and have had at least one year's postgraduate internship in a modern and well-equipped hospital with a daily average of not less than 40 patients. For the position of pathologist, applicants must also have had at least six months' experience in laboratory work in biochemistry, histologic technic, gross and clinical pathology and bacteriology, and for the position of assistant anesthetist applicants must also have had at least six months' experience in the administration of general anesthetics.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of U. S. Civil Service Examiners at the post office or custom house in any city.

BOOKS RECEIVED

Tonsillectomy. By means of the Alveolar Eminence of the Mandible and a Guillotine; With a Review of the Collateral Issues. By Greenfield Sluder, M.D., Fellow of the American College of Surgeons and Clinical Professor and Director of the Department of Rhinology, Laryngology and Otology, Washington University School of Medicine, St. Louis, Missouri. With ninety illustrations. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

Epidemiology and Public Health. A Text and Reference Book for Physicians, Medical Students and Health Workers. By Victor C. Vaughan, M.D., LL.D., Emeritus Professor of Hygiene in the University of Michigan. Vol. II. St. Louis: C. V. Mosby Company, 1923. Price $9.00.

Cerebrospinal Fluid in Health and in Disease. By Abraham Levinson, B.S., M.D., Associate in Pediatrics, Northwestern University Medical School, etc. With 69 illustrations, including five color plates. Second edition, thoroughly revised. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

The Tonsils, Faucial, Lingual and Pharyngeal, With Some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School, etc. Second edition, illustrated. St. Louis: C. V. Mosby Co., 1923. Price $5.00.

Optotypes, consisting of test-letters and pictographs for measuring the acuteness of vision. By John Green, M.D., LL.D., Professor of Ophthalmology in St. Louis Medical College (Washington University) 1886 to 1913, and A. E. Ewing, A.M., M.D., Professor Emeritus of

Ophthalmology in Washington University. With 35 engraved plates. St. Louis: C. V. Mosby Company, 1923.

DREADS AND BESETTING FEARS, Including States of Anxiety, Their Causes and Cure. By Tom A. Williams, M.B., C.M. Boston: Little, Brown & Company, 1923. Price $1.75 net.

THE UNADJUSTED GIRL, With Cases and Standpoint for Behavior Analysis. By William I. Thomas. Boston: Little, Brown & Company, 1923. Price $3.00 net.

APPLIED PSYCHOLOGY FOR NURSES. By Donald A. Laird, Assistant Professor of Psychology, University of Wyoming. Octavo of 236 pages and 49 illustrations. J. B. Lippincott Company: Philadelphia and London. Price $2.50.

INTERNAL MEDICINE. A Work for the Practicing Physician on Diagnosis and Treatment With a Complete Desk Index in Three Volumes. By James C. Wilson, A.M., M.D., Emeritus Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College and Emeritus Physician to its Hospital; Physician Emeritus to the Pennsylvania Hospital and Physician-in-Chief to the Lankenau Hospital, Philadelphia; and Samuel Bradbury, M.D., of Cornell University Medical College. Illustrated with 427 text illustrations and 14 in color. Philadelphia and London: J. B. Lippincott Company. Price $20.00.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third Series. Volume 44, 1922.

A TEXTBOOK OF THERAPEUTICS, Including the Essentials of Pharmacology and Materia Media. By A. A. Stevens, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania, Philadelphia. Sixth edition, entirely reset. Octavo of 793 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $6.25 net.

STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Professor of Clinical Medicine, Jefferson Medical College. Fifth Edition, Thoroughly Revised. Octavo volume of 731 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $6.00 net.

THE SURGICAL CLINICS OF NORTH AMERICA, June, 1923, Volume 3, No. 3. San Francisco Number. Published bi-monthly. Philadelphia and London: W. B. Saunders Company. Price per year, $12.00.

NEW AND NONOFFICIAL REMEDIES, 1923. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1923. Chicago: American Medical Association, 535 North Dearborn Street, 1923.

RAKE KNITTING PATTERNS, by Bertha Thompson, Organizer and Director of Occupational Therapy and Principal of the Summer School of Occupational Therapy, Woodstock, N. Y. Milwaukee, Wisconsin: The Bruce Publishing Company, 1923. Paper, 69 pages. Price 85c.

BOOK REVIEWS

TEXTBOOK OF ANATOMY AND PHYSIOLOGY, by Elizabeth R. Bundy, M.D., Fifth Edition Revised and Enlarged by Martha Tracy, M.D., Dr. P. H., and Grace Watson, R. N. Philadelphia: P. Blakiston's Sons & Co., 1012 Walnut St. Price $2.50 net.

This book is an admirable exposition of the subject of anatomy and physiology. The subject matter is clearly and concisely presented. The whole of the subjects are well covered and the arrangement is logical. Throughout the entire book the authors point out practical application that may be made of the information that may be obtained by a careful study of the contents.

The reviewer feels that the authors have succeeded in supplying a book that covers the fundamental branches of anatomy and physiology, that is remarkably well adapted to the needs of the pupil nurse as well as of the graduate nurse and all others who desire a practical knowledge of these subjects. G. E. H.

TEXTBOOK OF OPHTHALMOLOGY, by Hofrat Ernst Fuchs, Former Professor of Ophthalmology in The University of Vienna. Authorized translation from the Twelfth German Edition; completely revised and reset, with numerous additions specially supplied by the author and otherwise much enlarged by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York. With 455 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $9.00.

The new Seventh Edition of Professor E. Fuch's Textbook impresses one as being a veritable encyclopedia of information, so completely does it cover the field of ophthalmology, as in no other single volume. Dr. Alexander Duane has thoroughly Americanized this edition by the many references to the work of ophthalmologists in this country. The new arrangement of the subject matter is a decided improvement over older editions, the chapter sequence avoids confusion and tends to simplify the use of this volume as a most valuable work of reference. The numerous revisions and additions in the text represent the very latest advanced thoughts, while the many noteworthy contributions to the literature by European contemporaries of international reputation, E. Treacher Collins, J. Van Der Hoeve, Allvar Gullstrand, R. H. Elliott, Ignacio Barraquer and many others, have been freely quoted. It is noted with regret that Dr. A. Duane does not use the Christian names or initials of the authors in his references. This would avoid confusion in determining to whom credit should be given.

The success of former editions will surely be surpassed by the demand for this new edition of Professor E. Fuch's Textbook, a book needed by every student and practitioner of ophthalmology. G. H. C.

ENLARGEMENT OF THE PROSTATE, by John B. Deaver, M.D., LL.D., Sc.D., F.A.C.S., John Rea Barton Professor of Surgery, University of Pennsylvania; Surgeon-in-Chief to the Lankenau Hospital, Philadelphia. Assisted by Leon Hermann, B.S., M.D., Urologist to the Methodist Episcopal Hospital, Philadelphia; Assistant Surgeon to the Pennsylvania Hospital, Philadelphia; Instructor in Urology, University of Pennsylvania. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1922. Price $7.00.

The exhaustive historical review of the prostate is illuminating and of extreme interest. It is noted that until 1887 the perineal route was the one used for excision of the gland. Since that time suprapubic prostatectomy has become the favorite method.

The anatomy comprises about fifty pages and is worked out in detail. The illustrations are fine and show the extreme care and skill exercised in the dissection of this part of the body.

As to the etiology of benign hypertrophy, the authors frankly confess a "complete ignorance of the cause of this condition" and consequently do not shed any new light on this phase of the trouble, other than that age, social habits and specific infections may be considered as playing a leading rôle in its causation.

Cystoscopy is regarded as essential to a complete diagnosis. However it is contraindicated to a great extent in the aged, where there is present a large amount of residual urine, and in those persons who show a tendency to urethral fever. The technique of vesical cystoscopy is omitted but so far as it relates standpoint of their application to prostatic cases" and

Stress is laid on kidney functional tests "from the they rely upon "the percentage of elimination of to the prostatic region it is gone into in detail.

(Concluded on page xiv.)

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BOOK REVIEWS

(Concluded from page 722.)

phenolsulphonephthalein and the degree of urea retention in the blood" as "the most important criterion of kidney function." The technique of the different tests is given fully.

The question of prognosis is given very serious consideration and is resolved into two leading questions: mortality and final functional results. It is of interest to note that, from statistics, the catheter life of a patient is from four to five years. This seems to be rather short and may only be exceptional, when we find many men who have been using the instrument for a number of years.

To nonoperative treatment considerable space is devoted and much stress is laid on the adoption of regular habits and temperament. "His habits should embrace the happy medium in which alone the path of safety lies." The authors advise against the establishment of a catheter life "except in those cases of the inoperable type" on the ground that it is only palliative and will shorten life.

The treatment by prostatectomy has become so successful that palliative measures are no longer recommended but as a means of preparation for the radical operation. The authors divide the cases for operation into three groups: (1) Those in the initial stage of prostatitis without complication, requiring preliminary treatment—clean cases. (2) The great majority of patients, who, because of complications, require preliminary treatment—infectious cases. (3) When palliative treatment is contraindicated and immediate operation is necessary because of obstruction—emergency cases.

About seventy-five pages are devoted to the different types of operations.

The book is a splendid presentation of this peculiar affection of the male about which formerly very little has been written, and is worthy of a place in the library of every practitioner of medicine. I. G. S.

SELECTED PAPERS AND ADDRESSES, by William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. George W. Jacobs & Co., Philadelphia, Publishers.

Dr. Keen has made a selection of subjects upon which he has labored in his long and useful career which demonstrates the protean faculties of this noted surgeon and writer. The Doctor has always been recognized as belonging to the "School Militant," whether in the realm of surgery, vivisection, religion, evolution, war or administration.

In this splendid book Dr. Keen records many valuable points of historic connection between the old and the new age of surgery which he has lived to see accomplished.

The reading of the book, together with the attached bibliography, would in itself constitute a good education in the ethics of the medical profession.

The book is appropriately "dedicated to John Chalmers Da Costa, M.D., S. D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia. Pupil, Assistant, Colleague, Successor. A token of admiration and affection."

It is well worth reading by the thousands of physicians who have come in personal contact with Dr. Keen as well as the younger generations in medicine who are coming on. A. C. M.

Dr. O. Pine queries: Why the duplication of medical societies in certain big cities? Is it due to the Cæsarian attitude of desiring to be first in a Spanish village rather than second at Rome? What good does medicine derive from the formation of competing bodies which only weaken the mother organization? Why not abolish superfluous, parasitic medical mutual admiration societies?

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Space for the Annual Session of the Medical Society of the State of Pennsylvania, Pittsburgh, October 1 to 4, 1923, is almost sold out. Only ten spaces are left. Better reserve yours now. Address FREDERICK L. VAN SICKLE, M.D., Manager of Sessions and Exhibits, 230 State St., Harrisburg, Pa.

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ORIGINAL ARTICLES

SYMPOSIUM ON BRAIN TUMOR

DIAGNOSIS OF BRAIN TUMOR*

WILLIAM G. SPILLER, M.D.

PHILADELPHIA, PA.

It is a difficult undertaking to present in fifteen minutes, the time allotted me, a review of the diagnostic features of tumor of the brain, as many pages could be written on this subject. The most I can hope to accomplish is to present a few of the more interesting observations on this subject in a very sketchy manner.

The more common signs of brain tumor are generally recognized. They are those of general increase of intracranial pressure and of focal irritation or focal defect. Under the signs of increased pressure are included headache, choked discs, nausea and vomiting, general convulsions, vertigo, etc. These indicate nothing more than the existence of increased intracranial pressure, and may occur with hydrocephalus, abscess, serous meningitis, encephalitis (especially the epidemic form), etc. The signs of focal irritation or focal defect become of great value in indicating to the surgeon the site of operation. They are often combined, so that the loss of certain function may be associated with increase of other function, but in some cases defect symptoms alone are of focal value, and in other cases irritation symptoms, convulsions or twitching movements may be those on which we have to depend.

There is no doubt that brain tumor is a common disorder, and frequently some other intracranial disturbance must be distinguished which closely resembles tumor clinically. Epidemic encephalitis is occasionally a cause for much confusion. I have known cases of encephalitis in which the diagnosis of tumor had been made, and in one case operation had been performed. The difficulty is usually in the diagnosis of a tumor of the basal parts of the brain. Some of the encephalitic clinical findings—nystagmus, cranial nerve palsies, hemiplegia, swelling of the optic discs—may make the differential diagnosis from basal tumor difficult. The postencephalitic findings may be very numerous and diverse, and include not only mental deterioration but focal symptoms of cranial nerve involvement.

The diagnosis of tumor, as a rule, is not very difficult, but cases come before us in which we cannot decide positively whether a tumor is present or not. Still more numerous are those cases in which we believe a tumor to exist but have no finding which permits localization and operation. I must maintain that even with all the modern helps available the diagnosis of location is not always possible. Various conditions may cause confusion. We may, as in a case at the University Hospital reported by Fay, have such conflicting symptoms as obstruction of the posterior horn of the right lateral ventricle, as though a tumor were occluding this ventricle, associated with right homonymous lateral hemianopsia. This latter sign can be produced only by a lesion of the left visual fibers posterior to the chiasm. Necropsy in this case showed a basal tumor distending to such a degree the middle cerebral artery passing over the left optic tract, that this artery had cut half way through the optic tract like a string, destroying the outer visual fibers some little distance from the tumor.

Another recent puzzling case was one in which sensory and motor defect symptoms suggested a tumor of the right parietal lobe, and these symptoms were associated with right homonymous lateral hemianopsia—again a group of conflicting symptoms. The ventriculogram showed obstruction of the posterior horn of the right lateral ventricle. The tumor was in the base of the right frontal lobe and caused so much upward pressure as to disturb the function of the right motor and parietal cortex, and grew beneath the brain to implicate the left optic tract. Examination of the two cerebral hemispheres showed that the right was considerably larger than the left, on account of overgrowth of neuroglia, and this enlargement entirely occluded the middle and posterior part of the right lateral ventricle.

I called attention in 1914 to this overgrowth of brain tissue associated with tumor, even when

*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

the tumor is very small. It is difficult to determine microscopically an overgrowth of neuroglia in such a case, even with a differential neuroglia stain. I want to call attention again to the confusing symptoms which may be caused by such brain enlargement. It probably had much to do with the pressure of the right motor and parietal cortex against the skull and the production of misleading symptoms thereby. It was certainly the cause of the occluded posterior horn of the lateral ventricle and suggested occlusion of the ventricle by tumor, which did not occur. The case shows how careful one must be in the interpretation of ventriculograms and how difficult the interpretation of tumor signs may be. I have known a tumor to be missed at operation by the fraction of an inch from inaccuracy of interpretation of clinical findings.

X-rays used without injection of air into the cranium are only occasionally of great value in tumor diagnosis. I have seen an enchondroma of the cerebral hemisphere so clearly defined by these rays that the tumor could be found without difficulty at operation performed by Dr. Frazier. I have known a calcified supracellar cyst to be equally well defined by this method, but usually the tumor cannot be photographed by x-rays. The sella turcica and its clinoid processes lend themselves most serviceably to the x-rays, and much valuable information may be derived in this way from the atrophy of these structures. The great increase of intracranial pressure of long duration may be revealed by the x-rays in the atrophy of the inner table of the skull corresponding to the convolutions, as pressure is exerted over the convolutions and not over the fissures, but this finding is more likely to be with hydrocephalus or hydrocephalus associated with tumor, and can exist only in those cases in which the pressure has been long exerted.

The injection of air into the cranium and the x-ray examination of the ventricles by this means may be of diagnostic importance. The method is not to be considered as free from all danger, and it requires a knowledge gained from repeated use of the method to make it one to be employed successfully. In my experience, which I confess to be limited and to which I refer with some diffidence, serious results may occasionally follow the injection of air into the brain. When done successfully considerable light may be thrown on a diagnosis, but there is decided possibility of erroneous interruption of the x-ray findings, as from brain swelling to which I have already referred, from which the walls of a lateral ventricle may be so brought in contact as to prevent the entrance of any air into the posterior horn.

There are cases in which choked disc is the most prominent sign of intracranial pressure and all localizing signs are wanting, or this may be associated with headache and vomiting. The correct diagnosis may seem to be tumor. Sometimes repeated lumbar puncture with removal of 3 to 5 c. cm. of cerebrospinal fluid will cause a rapid subsidence in the choked disc and even a return to normal condition of the optic nerve; but where recovery occurs we are dealing with one of those often puzzling forms of pseudotumor which simulate tumor closely. The condition may be serous meningitis. The diagnosis of a congenital condition of the disc resembling optic neuritis is sometimes made by the ophthalmologist. This diagnosis is admittedly difficult and must be accepted with much reserve. In some cases of demonstrated tumor I have known headache and vomiting to be relieved temporarily by concentrated doses of magnesium sulphate or the administration of sodium chloride by mouth in the method described by Hughson. It would seem that fluid is drawn away from the brain in this way and the temporary relief is not to be despised. It is not a treatment which can be continued indefinitely.

A sixth nerve palsy occurring late is a sign occasionally causing a mistake in focal diagnosis. I have known it to develop with tumors of various regions, as with tumor of the parietal lobe, or of the frontal lobe, or of the parietal occipital region. It may occur whenever the intracranial pressure is greatly increased and is probably produced by pressure at a distance on the nerve. The sixth nerve has the longest intracranial course of any of the cranial nerves, and its paralysis may be of short duration in intracranial tumor. I have known both sixth nerves to be affected in the same case at different times, and the paralysis of one of these nerves may disappear before or soon after the other sixth nerve is paralyzed, and both sixth nerves may recover within a short time. A sixth nerve palsy developing early or associated with paralysis of adjoining cranial nerves has focalizing value, but great caution must be shown in evaluating a sixth nerve palsy developing late in a symptom-complex.

The diagnosis of an angle tumor, i. e., one situated in the depression made by the pons, medulla oblongata and cerebellum, is at times very difficult. The tumors of this region are usually of one type, that of fibroma. The tumor may bear a resemblance to spindle cell sarcoma and a question may arise as to the correct pathological diagnosis, but it is usually a tumor of very gradual development and the pressure from it increases very slowly. It is a well known fact

that when a lesion develops slowly in the brain it does not cause the same intensity or extent of symptoms as when it forms rapidly. In the first case the brain shows a capability of readjustment to the altered condition. We may therefore be called upon to diagnose an angle tumor when the symptoms are very slight, even when there is no nerve deafness and no paralysis of the facial nerve, two signs we count on invariably when the pressure of an angle tumor has become sufficiently great. At this stage of development even swelling of the optic nerve may be absent. I have had at least three cases of this kind recently in which, with few symptoms, I have been compelled to depend partly on the findings of the Bárány tests, as reported to me by Dr. Louis Fisher. I regard these tests, in the hands of a trained otologist, as of the greatest value in the diagnosis of an angle tumor. I have not so far obtained much aid from these tests in tumors of other location, but the absence of the characteristic findings of these tests for angle tumor have made me exclude angle tumor where I had previously suspected its presence. Where these tests show complete loss of function of one vestibular nerve, even though the cochlear nerve of the same side is intact and there is no deafness, and there are certain other symptoms, we may suspect angle tumor. One of the most striking cases of this kind has recently come under my observation. A man of middle age developed intense vertigo, so that objects revolved in the same direction before him and he walked with great incoördination. Gradually this vertigo disappeared, but for several months he has had a continuous tinnitus like the buzzing of a swarm of locusts, his head has felt heavy as though he had had too much sleep, he staggers considerably at times in walking, he has had flashes of light before his eyes which he has actually mistaken for lightning, and the Bárány tests show the left vestibular nerve to be without function. He has, therefore, a dead left vestibular nerve with irritation probably of the left cochlear nerve causing tinnitus, and irritation of one or both optic nerves causing flashes of lightning.

An apparently successful removal of an angle tumor is sometimes followed by distressing symptoms. The cause of these is not easily determined. The postoperative condition occasionally may be worse than the preoperative condition, but where tumor of the brain is not removed we know that the patient must certainly become progressively worse and finally perish. What is the cause of increase of symptoms after this operation? The tumor is usually of that variety generally recognized as fibroma or endothelioma. Is is often rather loosely attached and can at times be removed intact. The situation is, however, almost the most dangerous any tumor can have and yet be operable, for the medulla oblongata is least capable of sustaining trauma. Some disturbance of this important structure is necessary in the removal of any angle tumor and it may be that edema of the medulla oblongata follows removal. I have wondered whether irritation of the choroid plexus of the fourth ventricle, with the production of hydrocephalus, might result from removal of an angle tumor.

The temporal lobe of the left side in right-handed people gives definite defect symptoms of tumor located in this region. We are familiar with the word-deafness and word-blindness, and if the growth goes deeply enough into the brain, with right homonymous hemianopsia and possibly right hemiplegia and right hemianesthesia, but these are symptoms usually of later development. Some years ago I spoke of amnesic aphasia, of the inability to get exactly the proper word in speaking, as one of the earliest signs of tumor of the upper left temporal lobe. I have had at least two typical cases of this, with necropsy. The condition has been observed by others, and recently Herrmann has written on the subject. The inability to get the desired word is the first evidence of jargon aphasia, and it precedes any indication of word deafness. The patient may say he has pain in his neck, intending to say in his head. This amnesic aphasia may erroneously be attributed to a lesion of Broca's area, and it is important to remember it is not uncommon from a lesion of the posterior part of the left first temporal convolution.

Focal purulent meningitis may be confused with brain tumor, as I have observed, but the rapid change in symptoms with great increase in their seriousness, should lead to detection of the error; and yet symptoms of tumor may develop suddenly. I have recently seen the first evidence of brain tumor to be suddenly developing Jacksonian convulsion followed by weakness of the affected side, and within two or three weeks by complete paralysis of the affected side. The tumor was found in this case.

Segmental motor paralysis may be an important sign of brain tumor and may also be the cause of confusion in diagnosis. It may require careful observation to decide between a lesion of peripheral nerves and a sharply defined lesion of the brain cortex. Where only a small part of a limb, as the hand or foot, is paralyzed, one may fail to attribute it to a cortical disturbance, and yet the segmental part of a limb is sharply represented in the cerebral cortex. This was the subject of a contribution by the present writer

to the Osler memorial volumes, and important cases illustrative of the condition are reported in that paper with references to the literature. As an illustration, a case not included in the paper referred to is mentioned here. A man had paralysis confined to one foot. The occurrence of exaggerated tendon reflexes and convulsions confined to the same limb made the diagnosis of cerebral tumor probable, a diagnosis which I later found had also been entertained by Dr. G. J. Wright of Pittsburgh. Operation was at first declined by the patient, but later was performed by Dr. L. H. Landon of Pittsburgh, and an endothelioma arising from the falx cerebri was found and removed, and the patient is doing well.

It is often difficult to persuade a patient, when the paralysis is of the limited segmental type, to submit to an operation, and yet the early cases are those which afford the best results from operation. I have known the tumor to be so small as to render it inconspicuous at operation. It may be entirely subpial, without elevation above the surface of the surrounding brain and without differentiation by color from the surrounding cerebral tissue, and may readily be overlooked if one is not very careful.

4409 Pine Street.

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THE DIAGNOSIS AND TREATMENT OF BRAIN TUMORS*†

WALTER E. DANDY, M.D.

BALTIMORE, MARYLAND

All lesions become more frequent as our acquaintance with them grows. If we hark back but a very few years, appendicitis was unknown, then very rare, and finally a very common ailment. The same story is true of any number of lesions. The great educator of true perspective is necropsy and operation. Brain tumors are passing through the rare stage because neither necropsy material nor operative inspections have checked mistaken diagnoses. But in a few clinics intensive studies have shown not only that brain tumors are among the most frequent tumors of the body, but during the first six decades, particularly from the second to the fifth decades, tumors are among the most common afflictions of the central nervous system.

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†From the Department of Surgery of the Johns Hopkins University and Hospital.

The results of the long struggle in the solution of appendicitis should teach us much about the fundamental treatment of brain tumors, and prevent many of the sad chapters in its story when told in later years. Two accomplishments have transformed a prohibitive mortality in the treatment of appendicitis into one which should be practically nil: first and foremost, an early and accurate diagnosis, and second, an early and efficient operative procedure which eradicates the cause.

In the treatment of brain tumors, the same two factors are all-important, and in addition there is the third great factor—*localization* of the tumor. Although the diagnosis and localization of appendicitis are nearly synonymous, the same is far from true in brain tumors. In fact, the localization of brain tumors has been the most difficult phase of this complex neurological problem.

It is doubtless known to you all that tumors as large as one's fist are still compatible with life and without giving the slightest evidence of their situation. For many years it has been possible to know that a patient was afflicted with a tumor, but we have not been able to tell where it was located. With such inadequate information, it is clear that operative results must be very poor. Without accurate information, I should venture the assertion that in the hands of the very best operators, less than one-third of all explorations for brain tumors would actually disclose the tumor at the first operation. In fact, so discouraging have been explorations for tumors of the brain, that, except when the location of the tumor seems clear, the palliative decompressive operation has become more or less routine. Obviously, such treatment is most unsatisfactory. There is only one way to cure a patient with a brain tumor, and that is by a complete extirpation of the growth by operation. Decompressions have been justifiable only because the location of the tumor has been unknown. If the location of the tumor is known, any treatment which delays or is palliative, is no more justifiable than delay or palliation in appendicitis.

Although the rate of growth of brain tumors is variable, a fatal outcome is almost inevitable. But we have many warnings of this impending calamity. Tumors cause headache, destroy vision, produce paralyses, convulsions, speech and mental and other disturbances, and most of these changes are progressive. The great hope for patients afflicted with brain tumors, lies in the earliest possible diagnosis. To do this, it is incumbent upon us to suspect a tumor when any symptom or sign referable to the central nervous system makes its appearance. Fortunately, it is now possible by the use of cerebral pneumogra-

phy—i, e., roentgenography of the brain after the injection of air into its ventricles or subarachnoid spaces—to diagnose and also to localize practically all brain tumors which cause pressure, and in the early stages of the tumor's growth. This being possible, the problem of handling brain tumors is greatly simplified.

The treatment of tumors is now reduced to a single simple formula: complete extirpation when the nature and location of the growth make this possible; and when impossible of removal, then and only then to produce the maximum decompression for palliation. Unfortunately, some brain tumors, by virtue of their infiltrating character, do not permit extirpation. In other instances, removal is precluded because of the invasion of the brain-stem, speech centers, or other vital parts of the brain. There are, however, many nonencapsulated growths in silent areas of the brain which, if detected early, can be completely removed. The so-called silent areas of the brain were formerly the greatest handicaps to cerebral surgery because they prevented diagnosis or localization of the growths owing to the absence of signs or symptoms. Formerly, it was necessary to perform palliative operations until the tumor grew beyond the confines of the silent brain and produced paralyses or other focal destructions of the contiguous brain with recognizable functions. Now these silent areas are the greatest assets for the success of brain surgery; for, the localization now being possible in another way, extirpation of the growth can be done with contiguous silent areas of the brain, when necessary, and still leave the patient without noticeable defects.

I have said that practically all brain tumors should now be localized and at once. Brain tumors give rise to two types of signs and symptoms: (1) localizing symptoms and (2) general pressure symptoms. If the former are present, the localization is automatically made. Their consideration need not detain us. But the overwhelming proportion of brain tumors give rise to so-called pressure symptoms, and it is to the consideration of this difficult problem of localization that I wish particularly to call your attention. As you know, the craniovertebral chamber is a closed and fixed space and its contents—blood, cerebrospinal fluid, and brain tissue—are almost totally incompressible. For this reason, a new growth is tolerated only by a compromise with these intracranial contents, and this compromise gives the warning signs: headache, nausea and vomiting, choked disc, etc.

Probably all brain tumors which produce intracranial pressure, produce (as an expression of this compromise) changes in the size, shape or position of the ventricles and subarachnoid spaces of the brain. If the fluid from these spaces is removed and air is substituted in its place, these changes in size, shape and position will be accurately registered in roentgenograms of the head. It is, therefore, clear that if these alterations are known, the location of the cause which produces them (the tumor) can be deduced. I will now show you a series of lantern slides which will explain the localizations of brain tumors from every part of the brain. In many instances the localizations have been so precise as to permit transcortical incisions of great depth to find the tumor at operation, and often successfully to remove tumors which otherwise could never be found except at necropsy.

I should not wish to leave you with the impression that this is a simple and harmless procedure. Unfortunately, it is the reverse. It is both complicated and dangerous. The interpretation of the air shadows is difficult and is all-dependent on the intimate knowledge of intracranial anatomy and physiology. Its danger is shown by the fact that I have had 3 deaths in my first 100 injections. However, in over 400 since then, there has been none. This is owing to the fact that I have learned how to eliminate the dangers. Air is an irritant. When the ventricular channels are blocked, its absorption is prevented; a sero-sanguinous exudate results from its irritation, and this produces a marked accentuation of pressure symptoms. Many patients are so ill that this additional pressure could not be tolerated. To prevent this complication, the air should be removed as soon as possible after the skiagrams are completed. If the quantity of air injected is large (30 c.c. or more) either the original ventricular fluid or saline solution may be replaced. In safe hands, the procedure is now without great danger. It seems inadvisable, at least at the present time, that a risk so great as the use of air requires, should be assumed except by a competent neurological surgeon.

Lantern slides were then shown as follows:

(1) *Tumors of the frontal lobe.*—The localizations were made by dislocation of both lateral ventricles and the third ventricle away from the tumor (anteroposterior view). Often the homolateral ventricle, and at times also the third ventricle, were oblierated. The third ventricle, when present, takes an oblique instead of a normally upright position (anteroposterior view); ventricular filling defects on the side of the tumor (lateral views).

(2) *Tumors of the temporal and parietal lobes.*—Practically the same pictures as frontal lobe tumors, though with more pronounced filling defects. There may be elevation of the de-

scending horn of the ventricle in temporal lobe tumors. Parietal tumors may dislocate the body of the ventricle downward, broaden its diameter and shorten its height, or narrow its diameter and increase its height, depending on the exact position of the tumor.

(3) *Tumors of the occipital lobe.*—The lateral dislocation of the anterior horns of the ventricle (anteroposterior view, occiput down), is less than in frontal, temporal and parietal tumors, and may even be absent. Filling defects of ventricles and alterations in size, position and shape of the ventricles.

(4) *Ventricular tumors.*—Filling defects in ventricles and evidences of hydrocephalus from closure of the ventricles. A small tumor in the body of the lateral ventricle showed a normal ventricle anterior to the tumor and hydrocephalus of the ventricle posterior to it. The sharp anterior and posterior margins of the tumor were shown by the abrupt lines of termination of the air shadow. A tumor of the third ventricle showed a bilaterally symmetrical hydrocephalus, but with no communication between the two lateral ventricles and with absence of the third ventricle.

(5) *Tumors producing symmetrical dilatation of the lateral ventricles with intercommunication.*—This line of tumors included (1) suprapituitary tumors growing upward and occluding the aqueduct of Sylvius, (2) pineal tumors, (3) tumors contiguous to the pineal and third ventricle, (4) tumors in various parts of the posterior cranial fossa (cerebellum, cerebellopontine angle, brain-stem and fourth ventricle). All of these tumors block the iter or fourth ventricle. In one instance a shadow of a suprapituitary tumor was seen in the air background of the dilated ventricles; its presence could not be detected except in the presence of air. This has been an important finding in many other tumors situated elsewhere. In another case of suprapituitary tumor, the tumor had grown lateralwards and blocked one lateral ventricle and partially oblierated the third ventricle.

A pineal tumor was shown causing dilatation of the ventricles with partial obliteration of the third ventricle, and a large shadow of calcification in the air background.

An endothelioma arising from the leptomeninges near the pineal produced a great hydrocephalus of both lateral ventricles, partial obliteration of the third ventricle, and a great filling defect of the left lateral ventricle.

Various tumors of the posterior cranial fossa produce dilatation of the third and both lateral ventricles. A case of cicatricial closure of the foramen of Magendie was shown (with dilated lateral and third and fourth ventricles). After a new foramen of Magendie had been constructed, the air could be seen in the cisterna magna and the cerebral sulci (indicating that the new foramen was patent several weeks after the operation). The patient has since remained well (now 4 years). Another case was shown in which a tremendously dilated cisterna interpeduncularis extended upward and produced a great filling defect in the left lateral ventricle. Both lateral ventricles were of enormous size owing to the obstruction in the cisterna.

DISCUSSION

OF SYMPOSIUM ON BRAIN TUMORS

DR. EDWARD E. MAYER (Pittsburgh, Pa.): In arising at the request of our Chairman to discuss these papers, I beg your indulgence in refraining from any actual discussion. Having for so many years witnessed the thoroughness of Dr. Spiller's work, I recognize that only time limitations have prevented him from a more detailed and minute analysis of brain symptoms. And since Dr. Dandy, who alone can speak to-day with real authority concerning ventriculography, has given so interestingly his conclusions, coupled with such instructive pictures, I am sure you will agree that any discussion by me would be superfluous.

May I, however, stress Dr. Dandy's point that brain tumors are very common, so that physicians must be on the lookout for them? Inasmuch as I have had ventriculographic films taken and had difficulty in interpreting them, I wish to say that Dr. Dandy's pictures have been instructive to me, as I feel sure they have to the entire audience. How much they will be helpful in infiltrating growths and multiple tumors remains for the future to tell. Perhaps others carry away as I do, the impression from the pictures, that not ventriculography but Dr. Dandy's surgical ability has been illuminatingly brought out by his paper.

DR. SPILLER (in closing): I have little to add to what I have said. I admire Dr. Dandy's pictures and think he deserves congratulations for the work he has done by injection of the ventricles with air. The injection must be done with the greatest caution, and the interpretation may be easier to Dr. Dandy than to those who have not had his experience. There is considerable danger of misinterpretation of the findings.

CEREBROSPINAL SYPHILIS*

HENRY PLEASANTS, JR., M.D.

WEST CHESTER, PA.

AN INTENSIVE STUDY OF AN INTERESTING CASE SHOWING UNUSUAL SYMPTOMS, AND ILLUSTRATING THE VALUE OF SPINAL DRAINAGE FOLLOWING THE INTRAVENOUS ADMINISTRATION OF ARSPHENAMIN

Ever since Ehrlich evolved the formula of "606" or salvarsan the medical profession has been striving to determine whether or not this

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valuable remedy or its modifications is really specific as a cure for syphilis.

The results of many observers in the past decade have clearly shown that while the symptoms of syphilis, the adenopathies, dermatoses, etc., do quickly subside following the intravenous administration of salvarsan, it is yet to be proved whether or not the disease is actually cured, i. e., whether or not the spirochetes are all killed.

The Wassermann reaction has been an invaluable aid in the diagnosis and treatment of syphilis. But, again, the persistence of a positive Wassermann reaction following intensive treatment has brought up the question as to whether or not this reaction is absolutely dependable. Some cases where the Wassermann has remained positive in spite of a long course of intensive treatment have been termed "Wassermann fast," leaving, however, considerable doubt in the minds of clinicians as to the efficacy of the treatment.

Solomon, in The Archives of Neurology and Psychiatry, Vol. 7, No. 2, February, 1922, gives a very clear résumé of the results of many observers in the treatment of neurosyphilis. He states that there is no uniformity of opinion concerning the value of treatment in the various types of neurosyphilis. There is no definite evidence to show which methods are the most satisfactory; and, furthermore, the majority of the reports concerning treatment were unsatisfactory, for, as he says: "Few patients were treated, and usually treatment was not carried on arduously or to conform with the patient's tolerance for the drugs. In the majority of instances the patients were not followed for a long period after improvement, a criticism often made by those who hold that treatment is of little value."

In view of the above, it would seem that in the study of neurosyphilis the most valuable information is to be obtained by a very intensive study of a comparatively few cases, rather than a superficial study of a very large number of cases. Therefore the following case is cited more as an example of the value of such intensive study. In this case there are many features which are constantly met with in general practice, and which are still mooted points among investigators. It also illustrates so many of the points of frequent failure to secure good results in treatment that it is given in detail:

CASE HISTORY

Patient, C. C., aged 30, white, machinist, married.

Chief complaint: Headache, occipital and general.

Prev. med. hist.: No scarlet fever, no influenza, no typhoid, no pertussis, no diarrhea. Measles in childhood; tonsillitis every fall. General health has been good, but patient states that he has been underweight all of his life. For many years, and up to the present time he has suffered from palmar eczema which has resisted all forms of treatment.

Social history: Normal child. Went to school for six years. Stood average rank in his class. Worked as a machinist for past 15 years. Regular habits. Used alcohol moderately up to two years ago. Denies Neisserian infection. Married in May, 1919. Wife had one miscarriage during the influenza epidemic. Patient had luetic infection in November, 1919. Primary sore and secondary rash.

Family history: Father died of unknown cause after separation from patient's mother. Father was intemperate. No definite history of lues. Mother living and well except for chronic nephritis and cholecystitis. Mother had small epithelioma of nose which yielded to treatment. One sister had double ovariotomy and oöphorectomy some years ago. Her blood Wassermann is negative. Another sister is living and well. There is no history of tuberculosis in the family.

Present illness: Patient was perfectly well up to November, 1919, when he developed a Hunterian sore. There was no known history of exposure. Secondary eruption appeared December, 1919, with definite mucous patches, sore throat and falling hair. Was first examined at skin dispensary of a well-known teaching institution. Later was treated at genito-urinary clinic at same institution. Wassermann at this time was 4 plus. *Treatment:* First series, 10 intravenous injections said to be neosalvarsan. Wassermann then reported "Delayed negative." Second series: 8 injections of neosalvarsan. Wassermann then reported "negative." Third series: 8 injections presumably same solution. Wassermann reported "negative." Fourth series: 8 injections, Wassermann negative.

During this course of treatment the patient began to have headaches. They would be relieved temporarily by the injections of the arsenical, but later the injections merely served to dull the headaches which seemed to come on with greatest violence during the night. Following the injections, the patient would often vomit, and at times become irrational. Altogether about sixty doses of the arsenical were given, but the headaches were increasing steadily in severity, and at the time of examination were almost constant. The patient was in a pitiable condition, evidently suffering very excruciating pain. The summary of the findings at the first office examination in February, 1921, showed: Tachycardia, pulse 142; indicanuria, indican 4 plus; biluria, bile 1 plus; reflexes, exaggerated.

Owing to the evidence of biliary stasis, it was deemed advisable to try the efficacy of biliary drainage after the method of Lyon. This was done March 8, 1921. Bile flowed rather freely under stimulation with magnesium sulphate solution. A-bile clear; B-bile darker, but not inspissated; C-bile clear. Culture of bile showed no streptococci or typhoid group organisms.

Examination of the urine. March 10th showed no indican. Patient reported having had no headache since biliary drainage. Looked much better, but was advised to come to Chester County Hospital for observation and treatment.

Physical Examination

General appearance: Poorly nourished, hair thin, complexion sallow.

Eyes: Pupils react to light and in convergence, but are widely dilated from recent instillation of mydriatic.

Dr. Howard Mellor reports: Hypermetropic astigmatism. No fundus changes. Conjunctivæ suffused.

Nose: No abnormalities noted.

Tongue: Coated, tremulous. Tonsils, not enlarged.

Neck: Cervical glands palpable, thyroid not enlarged.

Chest: Ribs prominent. Expansion limited. Impaired resonance at right apex. Vocal and tactile fremitus increased. No râles or frictions noted.

Heart: Apex impulse visible fifth interspace m. c. line. Precordium moves visibly with each impulse of heart. Heart action very rapid, myocardium poor tone. No murmurs noted. Outline shows slight enlargement to left and also to right of sternum.

Liver outline: Upper border sixth rib. Lower border slightly below costal margin.

Spleen and kidneys not palpable or enlarged demonstrably.

Abdomen: Marked rigidity of upper pole of right rectus muscle over gall-bladder region. No tenderness over region of appendix.

Genitalia: Scar of hunterian sore.

Glandular system: Uniform enlargement of epitrochlears, post-cervicals and inguinals.

Neurological: Patient's station is good. No ataxia noted. At times during a severe headache there has been almost complete inability to articulate. Gait is normal. There is no ataxia. Sensation is normal. The reflexes are definitely exaggerated.

Clinical Analyses

Urine: February 26, 1921: Amber; acid; sp. gr., 1010; albumin, none; sugar, none; indican, 4 plus; acetone, none; bile, 1 plus; no microscopic. March 11, 1921: Amber; acid; sp. gr., 1028; albumin, none; sugar, none; indican, 1 plus; acetone, none; bile, none; casts, none; crystals, calcium oxalate.

Blood: R. B. C., 4,240,000; W. B. C., 7,990; Hb. 80% polynuclear, 75; lymphocyte, 21; mononuclear, 2; eosinophile, 1; transitional, 1.

Blood Wassermann, negative (State Laboratory, No. 15843, Series S-8612).

Spinal fluid: Fluid withdrawn, 20-30 c.c. Considerable pressure. Clear, no flocculi, no sediment. Total cell count: 200 per c.cm. Polynuclear 20%; lymphocyte, 80%; Wassermann, 4 plus; globulins, 4 plus; sugar, negative; tubercle bacilli, negative.

Patient improved greatly after the withdrawal of the spinal fluid. He was kept in bed for several days, and during this time his teeth were examined roentgenologically, disclosing several apical abscesses and an impaction of one molar. Dental treatment was immediately started. A blood Wassermann was taken of the patient's wife, who was about six months' pregnant, and reported negative.

It was hoped that the refraction of the eyes, and the removal of the apical infections would relieve the headaches. For a time this was true, but in a few weeks the headaches began to return with increased severity. Dr. T. H. Weisenburg was then called in consultation and advocated repeated spinal drainage in order to relieve the tension.

Acting upon the suggestions of Dr. Weisenburg, the patient was given weekly spinal drainage for one month. The cell count at the first of these was 220, showing a distinct rise over the previous diagnostic drainage. After this series of drainage, the total cell count fell to 65 per c.cm., but the patient was by no means greatly improved, as his headaches continued to recur in spite of everything. He was then given a course of intramuscular injections of 1 c.c. of 1% biniodid of mercury every three days with no apparent improvement. The spinal Wassermann remained 4 plus. The extraction of an impacted wisdom tooth did relieve the headaches for a short time, but later they returned with great severity. The intravenous injection of 2 gms. sodium iodid in normal saline solution preceding the spinal puncture, was tried with the view to securing the highest iodid action in the spinal fluid. This was entirely unsuccessful. The patient developed severe headache, nausea, backache and general malaise, with more or less severe symptoms of iodism.

The intravenous injection of the arsenicals was deferred at the request of the patient for the reason that during his previous course of treatment he had suffered the most intense reactions after each administration, and it was feared that he had really an idiosyncrasy towards the drug. At last it was decided to return to it, as the man was becoming steadily worse, and his cell count was beginning to rise. It was largely owing to the successful treatment of a severe case of tabes dorsalis by Dr. Edward Kerr of East Downingtown by the combined method of intravenous injection of neoarsphenamin, and spinal puncture that this form of treatment was decided upon.

Following the intravenous administration of 0.9 gms. arsphenamin, a spinal drainage was done in 15 minutes, withdrawing 40-50 c.c. of the fluid under tension. The patient had a moderately severe reaction, consisting of a chill, headache and nausea. This disappeared within a few hours and he stated that he felt infinitely better. The following week he was given 0.9 gms. neoarsphenamin, followed by spinal drainage. The reaction from this was comparatively slight. The cell count had now fallen from 60 to 15 per c.cm. Another treatment with 0.9 gms. neoarsphenamin the following week brought the cell count down to 10. The spinal Wassermann was 2 plus. Globulin negative.

The patient by this time had symptomatically recovered. His headaches had entirely disappeared, and he was able to resume his work as machinist. He was given a respite of four weeks from treatment. At the end of this time he was given a series of three treatments using .09 gms. neoarsphenamin, followed by spinal drainage. One of the latter was unsuccessful in that no fluid was obtained.

About this time the patient's wife was delivered of an eight-and-a-half-pound boy, apparently perfectly normal. The placenta was normal in size and appearance, and the microscopic examination showed no evidence of syphilitic arteritis. The puerperium was without incident. The child flourished on the breast. There was a slight superficial tear of the perineum which was repaired at the time of delivery and which healed immediately.

The final report of the examination of the spinal fluid showed 6 cells per c.cm. Two Wassermanns were made in separate laboratories. The Department of Health Laboratory reported negative. The Chester County Hospital reported: P. H. H., negative; C. H. H., plus-minus. The patient was discharged, and up to the present time, one year later, has had no return of his symptoms.

The foregoing case shows:

(1) The importance of routine examination of the spinal fluid of syphilitics even after an intensive course of treatment and the presence of a negative blood Wassermann.

(2) It illustrates the value of intravenous treatment with neoarsphenamin followed by spinal drainage.

(3) It shows how rapidly the central nervous system may become involved following infection. In this instance the cerebrospinal involvement progressed coincident with a very intensive course of treatment at a well-known clinic.

(4) It shows how it is possible for a patient with active cerebrospinal syphilis to become a parent of an apparently healthy child, and avoid conjugal infection.

(5) It raises a point, however remote, as to whether or not this individual had latent hereditary syphilis, as suggested by the vague history of his father, and the fact that he had suffered from palmar eczema. It is possible that the definite infection lighted up the latent hereditary cerebrospinal lesion. The sincere thanks of the author are extended to Dr. Edward Kerr of East Downingtown for the original suggestion as to the value of the form of treatment adopted; to Dr. T. H. Weisenburg for his nerological study of the case; and to Dr. William Greenfield of the Chester County Hospital for his invaluable and highly accurate pathological work, without which the success of the treatment would have been impossible.

Farmers and Mechanics Trust Bldg.

DISCUSSION

Dr. Theodore H. Weisenburg (Philadelphia, Pa.): Dr. Pleasants' interesting clinical report illustrates the value of careful work even in one case. It has been thought that salvarsan has many advantages over the old line therapy, but for the first time we are given the opportunity to check this up, for some of the cases first treated in this country by salvarsan are now coming to our clinics. These early cases were not treated as intensively as is the custom now, for it will be recalled that in the beginning many claims were made for this drug which have not been borne out by experience. Cases of tabes dorsalis, in which injections have been given once a week or less often, and in which no other therapy was employed, are now coming to our clinics. This would indicate that, at least by the method first employed, the results are no better than they were by the mercury and iodid treatments. However, we shall be better able to give a final opinion as to the value of salvarsan in five or ten years from now, when sufficient time will have elapsed for the development of tabes after more intensive treatment by salvarsan.

In regard to our use of salvarsan, it seems to me that the intravenous administration gives as good results as any, although each case merits individual attention. For example, in the case of Dr. Pleasants it is apparent that spinal drainage following the injection of salvarsan gave the best results. Similarly in other types of cases the spinal method may be the one of choice. This illustrates that the routine method of treatment of neurosyphilis by intravenous injections is not applicable to every case, a factor not always appreciated by those who treat syphilis of the nervous system.

Regarding the number of injections that one may give to cases of tabes and other forms of involvement of the nervous system, I have no hesitancy in giving large doses. For example, in the Polyclinic Hospital where there is a large outpatient syphilis clinic, there are a number of tabetics who have had over 150 injections. These patients seem to have acquired the salvarsan habit, for they come to the dispensary without preparation, get their "shots" and go back to work apparently without harmful results. If they are discharged, they go to some other dispensary, and after being discharged there, return to the Polyclinic for further treatment. Apparently a salvarsan habit is easily formed. In defense of this the patients claim that the "shots" make them feel better.

Dr. Sherman F. Gilpin (Philadelphia, Pa.): The problem of drainage of the cerebrospinal fluid in the treatment of neurosyphilis has been interesting me since 1914 when we began trying it out in the Jefferson Hospital Nervous Clinic. We soon became so well satisfied with the results obtained, that it was adopted as a routine procedure in the treatment of all forms of neurosyphilis and is so used at the present time. I am encouraged when at last some one else has read a paper on the subject and demonstrated the value of drainage of the spinal fluid in this disease.

The case just reported, a case apparently of cerebrospinal syphilis of the interstitial or vascular type, is the kind that once in a while does not yield to the ordinary treatment without drainage of the spinal fluid. I should like to report another case bearing on this point: A young man, infected at the age of 17, was thoroughly treated until his blood Wassermann remained negative. At 24 he was taken into the army, sent to France as a lieutenant, and there given very strenuous mental and physical work. After a few months he suffered from headaches and general ill health. His blood Wassermann was negative though he had the ordinary symtoms of brain syphilis. His fluid Wassermann was found to be plus 4. He was given six treatments of arsphenamin intravenously at weekly intervals. Then one month's rest from arsenic, while he took a course of mercury by inunction, with iodids by mouth. At the end of this period he had a second course of six arsphenamin treatments at weekly intervals. At the end of the treatment his fluid Wassermann was still plus 4. He was then returned to this country, and Major Ayedelotte, under whose care he was, gave him three intravenous treatments followed by drainage of the spinal fluid. His cell count fell rapidly and his Wassermann dropped to plus 2. He was discharged from the army and in about four months came to Jefferson Hospital for treatment. At this time his fluid Wassermann had gone back to plus 4, with a cell count of 75. He was put on mercury by inunction and at weekly intervals given 0.9 gm. neoarsphenamin intravenously, followed at once by thorough drainage of the spinal fluid. The fluid at the eighth treatment showed a negative Wassermann with a cell count of 16. The fluid at the ninth treatment showed a negative Wassermann and 8 cells. Treatment was stopped for three months and the fluid found to be negative both for cells and Wassermann reaction. He then worked for one year in good health and under no treatment. Examination of his spinal fluid at this time showed a negative and he asked me if he dare marry. I told him he could marry with safety so far as I knew; that it was my experience a fluid remaining negative for one year without treatment, did not become positive again even in tabes, but that my experience was limited to no longer than five years.

In the treatment of neurosyphilis and especially of tabes and paresis I cannot agree with Dr. Weisenburg in so free use of arsphenamin preparations. I do not know the patients at the Polyclinic Hospital but I see both tabes and paresis cases suffer from too much

arsenic given intravenously. They sometimes die and do so quickly. In these chronic cases not only the nerve tissue but the whole organism is involved and we must be careful not to give more arsenic than their diseased organs can take care of by way of elimination. The longest cure, if it may be so called, of tabes in my experience, is a patient with negative fluid for well on to five years with no treatment. She was given mercury only for eighteen months with thirty drainages of the spinal fluid. She is in good health at the present time. Another case with negative fluid and in good health for the past two years had mercury and fifty spinal drainages over a period of twenty-two months. They seem to be as nearly cured as any form of syphilis. I have a case of paresis in good health for seven years. He has been treated by mercury and his fluid has been drained about one hundred times. His Wassermann is still plus 4. I never have seen any treatment produce a negative Wassermann of the spinal fluid in a case of paresis.

DR. HORACE V. PIKE (Danville, Pa.): I do not desire to be considered as pessimistic in my viewpoint as to the prognosis of cases of neurosyphilis nor as advocating therapeutic nihilism in the treatment of this class of patients, but I cannot help but feel that with those of us who are able to study a large number of these cases and especially that type that reaches State hospitals for the insane, it is exceedingly questionable as to how much can be accomplished by treatment irrespective of the type of therapy used. For a number of years I have had the opportunity of studying neurosyphilis in all of its types and in all of its stages and I cannot help but feel, with Dr. Weisenburg, that in spite of the claims made for arsenicals, it makes but very little difference whether we follow out our treatment along the old lines with mercury and iodids or whether we administer intensive treatment with salvarsan, neosalvarsan with or without spinal drainage. Unquestionably, the drainage of the spinal canal will make many patients more comfortable and often relieve the distressing headache, but when definite neurological signs have made their appearance I have never seen them altered by any type of treatment, nor have I seen the serological findings entirely disappear. The Wassermann may become negative, the cell count may be markedly diminished but the reaction to the colloidal gold solution still remains; and while the case reported by Dr. Pleasants has apparently shown a cessation of all unpleasant symptoms, we must not forget that even without treatment many cases of neurosyphilis will present definite periods of remission lasting equally as long as in the case which he reports. His method of treatment is certainly commendable and further observation should be made on a large number of patients with the hope that in this method has been found a way whereby the agents now used intravenously may reach the focus of infection in the central nervous system.

DR. L. M. GATES (Scranton, Pa.): I think this case that has been recited to us impressed us with several points: One is, that they missed their greatest opportunity in this case and we should take that lesson, when a person comes to us with a lesion suspicious of syphilis that we should get busy, make examination of the lesion, make sure that it is syphilis, not call it "soft chancre" and miss the opportunity of curing for all time. I believe that is the only time that it is possible to cure the patient entirely.

A patient in contact with syphilis came to me with a very innocent-looking lesion of the vulva, but she had enlarged glands on both sides. I sent her for a blood test which proved mildly positive. Active treatment was instituted and she has not shown any signs of syphilis since.

The paper also shows we should examine the spinal fluid in cases that have lues and do not show it in the blood as they may have trouble that may crop out later. It shows the cause of failure because we do not treat early enough before the spirochetes have gotten in deeper tissues beyond the reach of the remedy. Did the author of this paper ever find out the size of doses given in the early stages of this case? Whether they were small or intensively large? I believe that large does to the limit of tolerance, must be better than repeated small doses.

DR. THOMAS C. STELLWAGEN (Philadelphia, Pa.): This discussion reminds me of what Record said—"Syphilis once, syphilis always." I have had a series of communications from Dr. M—— at the Lock Hospital, London. He has been taken to task for his views on spirochetes, but he has published a series of statistics on the use of colloids in conjunction with salvarsan treatment. It would be interesting to read a communication in which he discusses intramin, which is a combination of colloidal silver, iodin and manganese. I should like to hear whether Dr. Weisenburg has had any experience with it. I believe these cases are practically hopeless.

DR. PLEASANTS, JR. (in closing): I was extremely interested in hearing the parallel case recited by Dr. Gilpin, the first one that I have heard.

Regarding the danger in treatment of tabes, we had a very interesting experience with a patient who had tabes and who was given intensive treatment by one of the physicians at our hospital. He nearly died on the table. I think we want to go very slowly in giving combined arsenical treatment with spinal drainage to our tabetic patients.

Regarding the dosage that my case received at the clinic, I have no way of telling, because he came to me one and one-half years after treatment, but he described his symptoms following the treatment as being very, very severe. He said that a great many men who went to that clinic at that time would fall in the street and have to be carried back. He complained of intense vomiting for hours afterwards. I should say that the treatment carried out at that time was intense.

This patient showed something that Solomon called attention to in a review of the literature, namely, the rarity of patients suffering from cutaneous manifestations, and from cerebrospinal syphilis at the same time. It has been demonstrated that there is a selective action of the spirochete for the skin and mucous membrane, or for the cerebrospinal system. This was apparently a coincident condition where both were affected to a very marked degree.

PERITONITIS FOLLOWING OPERATION FOR CHRONIC CHOLECYSTITIS OF INFLUENZAL ORIGIN*

BENDER Z. CASHMAN, M.D.

PITTSBURGH, PA.

Within the past two years, I have had two cases of fatal postoperative peritonitis following

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cholecystectomy for chronic cholecystitis, as follows:

J. B., aged 39, carpenter, admitted February 28, 1921, complaining of pain in right side of abdomen. Onset one year ago. Nature of attacks: intense pain in right upper abdomen which was relieved slightly by lying on right side and drawing up the knees. Pain was often worse after eating, on an average of one-half hour after meal was taken. No relation to size or nature of meal. No history of jaundice.

Typhoid fever 14 years ago. Pneumonia 9 years ago. Influenza in May, 1920, and patient said that he had not been well since this attack. No history of tonsillitis. No operations. No cough, dyspnea, edema, palpitation or cardiac distress. Appetite fair. Patient was constipated and had been troubled with hemorrhoids. No urinary symptoms. No history of venereal disease or alcoholism. Patient did not sleep well. Joints got sore and ached but there was no swelling.

P. E.: No jaundice. Examination of heart and lungs negative. Abdominal examination negative except for marked tenderness in right hypochondrium in usual location of gall-bladder. Less tenderness present in region of McBurney's point. Temperature normal. Urine negative. Blood pressure 108-75.

Diagnosis: Chronic cholecystitis.

Operation: March 3, 1921. High right rectus incision. Gall-bladder gray, tense and emptied poorly. No stones felt. There were extensive adhesions between the duodenum and omentum and the gall-bladder and under surface of liver. These were divided. Cystic duct and vessels exposed and divided and gall-bladder removed. Gall-bladder fossa was closed with suture and drain inserted. Appendix was fibrous and contained fecoliths. There were some adhesions at its base. It was removed and incision closed. Patient left operating room in good condition. Culture of bile negative.

Patient had the usual postoperative discomforts for 36 hours, when he began to vomit and pulse rate was increased. He rapidly became worse, pulse becoming more rapid and of poorer quality and abdomen distended. Temperature 101°. Cyanosis, rapid thready pulse, cold clammy extremities, and death on the fourth day ensued. No autopsy.

The clinical picture was that of a streptococcus perionitis. We attributed this to some surgical accident, but the relation of the onset of gall-bladder symptoms to an attack of influenza made an impression that was not forgotten. Six months later the second case was encountered.

Mrs. M. H., aged 51. Admitted complaining of pains in knees and legs and some pain and discomfort in right upper abdomen.

No serious illnesses except influenza 1½ years ago, at which time patient was very ill with distention and persistent vomiting. She had not been well since then, having general aches and pains and in the last 6 months these had been especially marked in knees and legs. Patient was nervous and did not sleep well. Some dyspnea on walking. Some palpitation and occasionally edema of feet and legs. No cough. Appetite fairly good. No constipation. Had feeling of weight in stomach soon after eating and a sense of fulness. Feeling of pain or discomfort at times in upper right quadrant of abdomen referred to the back. No history of definite jaundice, but her daughter states that at times her skin had a yellowish tint. Patient passed through menopause one year before. Had one child living and well.

P. E.: On abdominal examination there was quite marked tenderness in region of gall-bladder, associated with considerable muscular resistance. No masses felt. Liver edge palpable, 2 f. b. below costal margin. There was some tenderness over McBurney's point. Two small polyps projected from cervical canal and a fibroid size of a hen egg was present in posterior wall of uterus. Temperature normal. Urine negative except for trace of albumin. Systolic blood pressure 134.

Operation: September 10, 1921. Excision of polypi of cervix with cautery, appendectomy and cholecystectomy with drainage. Gall-bladder was tense and emptied poorly. Duodenum and omentum densely adherent to under surface of gall-bladder. Culture of bile negative.

On day after operation, pulse was increased in rate, patient was nauseated and complained of being "so tired." The next day patient was vomiting and was distended. Pulse rapid and of poor quality. Hands cold and perspiring. Patient had no pain but complained of great weakness. She rapidly became worse and died 3 days after operation. Temperature rose to 107° before death. The abdomen was opened by the interne after death and he reported the presence of distended injected intestines and thin seropurulent fluid, thereby establishing the diagnosis of peritonitis. Unfortunately no culture of fluid was made. The clinical impression was that patient died of a streptococcus peritonitis.

Bearing in mind the previous case, the development of a second case with so similar a history made us feel that this was more than a coincidence. These cases are reported here with the hope of learning in the discussion if other surgeons have had similar experiences. I believe that there is a relation between the onset of the gall-bladder symptoms during an attack of influenza and the subsequent development of fatal peritonitis following cholecystectomy, but I have no bacteriological proof of this impression.

Many of the serious complications of influenza were due to the streptococcus hemolyticus and it is possible that in these cases we were dealing with latent microbism, the organisms being present in the gall-bladder and possibly the adhesions, and taking on increased activity in the presence of operative trauma, blood-clot and ligated tissues. Gynecologists and abdominal surgeons have known for a long time that occasionally a fatal streptococcus peritonitis will occur in operations on the pelvic organs years after a puerperal pelvic infection. Curtiss, in grinding and culturing the fallopian tubes removed at operation, found that the gonoccus lives but a short time in the tubes, but that the streptococcus lives there for years. During the late war, severe streptococcus infections and even septicemias were frequent sequelæ to early secondary operations on apparently healed tissues, so that finally in the British Army secondary operations were not considered as safe within

six months of the time of complete healing of the wound.

Rosenau has demonstrated nonhemolytic streptococci in the gall-bladder walls after destroying the mucosa, and found them the most common cause of gall-bladder infections. Since these two cases, we have been systematically grinding and culturing all of the gall-bladders removed, with very interesting results, but we have had no more cases of postoperative peritonitis nor have we in any case recovered a hemolytic streptococcus, so that no light is thrown on the point in question.

If these are really instances of latent microbism, two important questions arise, namely, "how can we determine this beforehand, and when is it safe to operate?" The characteristic point in the history was the dating of symptoms from an attack of influenza and the fact that the patients presented definite evidence of an active chronic infection since the influenza, apart from the local symptoms of cholecystitis. Chronic fatigue and aches and pains of a neuritic or arthritic nature were prominent and the patients were below par in a general way; so that given a case of chronic cholecystitis, the symptoms of which began with an attack of influenza and following which the patient has not been well, complaining of fatigue and general aches and pains, one should bear in mind the unhappy outcome in the above cases, 1 and 1½ years respectively after the onset of the illness. As to when it is safe to operate, I do not know.

I am reporting these cases as purely clinical observations for discussion. That the patients died of postoperative peritonitis, there is no question. There is no bacteriologic proof of the organisms present but the clinical picture was that of streptococcus peritonitis. As to the origin of the infection, the fact that the symptoms of cholecystitis in both cases date from attacks of influenza is very suggestive. The second patient, while vomiting persistently during her postoperative peritonitis, spoke of the measures used to control this same sort of vomiting and distension when she had the influenza. That the peritonitis was due to a slip in technic is of course possible, and that it occurred in patients with cholecystitis dating from influenza may be a mere coincidence, but in looking up our cholecystectomies for chronic gall-bladder disease, we find no similar cases. In conversation with other surgeons I have learned of two similar cases and I also learned that it is the impression of some of them at least, that peritonitis in abdominal operations in general was much more frequent in the first few months after the influenza epidemic than at other times.

I realize that without bacteriologic proof our deductions are speculative, but it is in a section such as this that we may be able to learn the experience and observations of others, and possibly determine the correctness or incorrectness of the conclusions. The proof would be the recovery of the same organism that produces the peritonitis from the tissues removed at operation. I would greatly appreciate a report of the occurrence of similar cases among the members of this section and particularly the bacteriologic findings.

DISCUSSION

DR. HENRY PLEASANTS, JR. (West Chester, Pa.): This paper brings up a rather interesting subject on which I have been working for the last two or three years. In many of our cases who present evidence of chronic cholecystitis I have been routinely doing a biliary drainage. I do not want to enter into the discussion of that, but a great many of these cases have given me evidence as to whether or not the bile is actually infected. The technic is not without fault, but in many instances I have been able to isolate organisms which gave us a clue as to the infection. The bacillus coli anaërogenes has been found in a certain proportion of cases we have drained, and I think where patients are likely to be a bad operative risk it is a safe procedure to attempt Lyons' method.

DR. ALFRED C. WOOD (Philadelphia, Pa.): The chair has had no experience such as Dr. Cashman reports, but in regard to the general subject, we know, first, that streptococcus peritonitis is very usually fatal. Some cases may recover. As you know, the habit of the streptococcus is to travel; it does not stop, and for that reason we do not get adhesions limiting the infection in cases of streptococcal peritonitis, as we do in peritonitis from some other infections. So that when you have to deal with streptococcal infection of the peritoneum you have a very serious condition to deal with. There is one point, however, that recalls the earlier days of the surgery of the appendix when some of the more conservative, and perhaps safer surgeons, recognized certain inflammatory conditions around the appendix that led them to believe that it would be much safer to drain the focus of infection than to make an extended search to find and remove the appendix. The same thought occurred to me as Dr. Cashman was reading. If the surgeon can recognize the type of infection by the appearance at operation, might it not be well merely to expose the gall-bladder, pack it off and drain rather than to take the chance of spreading a virulent infection by the manipulation necessary to remove the gall-bladder, even though a secondary operation might be required later in some cases?

DR. CASHMAN (in closing): In regard to the Lyons test, even if you can get the bile from the gall-bladder it has been definitely shown that you may have in chronic infection of gall-bladder sterile bile, but organisms in the wall. In regard to Dr. Wood's suggestions with respect to drainage, these were not acute cases. They started with influenza, but I operated on them one and a half years afterward. I believe that is one solution if you could pick out these cases that will terminate in peritonitis—to open the gall-bladder and drain, and possibly remove the gall-bladder later. The difficulty is to pick out such cases. I simply report these cases and call your attention to what happened to my two cases of cholecystitis, which originally started in an attack of influenza.

THE ESSENTIAL NATURE OF EPILEPSY*

CORNELIUS C. WHOLEY, M.D.

PITTSBURGH, PA.

Whatever its cause may be, epilepsy, as we know, expresses itself essentially through the nervous system. There is no part of the cerebrospinal-sympathetic mechanism which may not be involved in the symptomatology. The range of functional activity of this system is immeasurable, including as it does, in addition to the purely vegetative and sensorimotor, all mental and emotional activity. The variety and intricacy of the symptoms, therefore, which may appear in epilepsy are extraordinarily extensive, implicating as they may, any function of the nervous organization. The disease picture will vary with the stage of development of the nervous organism. In infancy and early childhood the channels of expression are much more limited than will be the case later when mental and other reflex organization has become more elaborated.

In order to get at the essential nature of epilepsy we must take into account the general underlying difference in function of the two primary divisions of the nervous system—the involuntary system, known as the sympathetic, or autonomic system, and the voluntary system known as the cerebrospinal, or projicient system. There must be, in the healthy individual, harmonious integration between the functions of these two primary divisions of the nervous system, and also healthy integration among the various activities of each separate system. These facts are emphasized because epilepsy seems to present a peculiar interruption in this necessary harmony of integration. The autonomic, or involuntary system, as we know, has to do with vegetative activities, controlling such involuntary functions as circulation, digestion and respiration. The cerebrospinal, or voluntary system, on the other hand, controls the volitional activities of the individual, represented largely in the functions of the great voluntary muscular system. The instinctive and emotional side of mental life is apparently under the domination, to a great extent, of the autonomic system with its endocrine, or ductless gland extensions.

It is this system, the autonomic, which almost entirely controls the activities of the infant organism. If we consider the manifestations which are more or less specifically associated with true epilepsy from the earliest days of life, and follow these through the years as the organism advances in age and elaboration of function, we can better appreciate the essentially nervous character of this disease. Such a study will enable us to make clearer distinctions in that obscure symptomatology where there can so easily be doubt as to whether the picture presents epilepsy, or some other nervous disease such as dementia præcox or hysteria. The infant organism is primarily engaged in the business of nutrition and growth, purely vegetative functions, under the control of the autonomic system. The psychic, or higher cerebral functioning, exists in infancy, in a most rudimentary form, as do also those finely integrated sensory and motor reflex activities which develop with the growth and needs of the organism.

The spasm or infantile convulsion is the earliest conspicuous symptom linked up with epilepsy. The cortical and corticospinal tracts and centers, which are destined to exercise marked control over the voluntary muscular system, are as yet but poorly developed, partly unsheathed, and naturally vulnerable to toxic and other disturbing causes. It would seem that the spasm is an indication of a lack of, or breakdown in the coördinating balance which normally exists between the two systems; and the assumption is that the corticospinal system is either inherently weak and vulnerable, or that this weakness has been acquired through malnutrition, toxicity, or a cerebropathy such as would follow prolonged labor or difficult instrumental delivery. Whatever the cause, the cortex is unable to maintain the stabilizing control which we attribute to it. The weakness may present itself as epileptic in the typical convulsive seizure. Sometimes the precipitating cause of the convulsion may be readily discoverable in intestinal intoxication, malnutrition, etc. These are the more favorable cases. If such cause cannot be discovered, or if convulsions persist in spite of its discovery and correction, the case is probably one of true epilepsy. The fact that infantile convulsions may have existed and that no adequate cause was found, and that epilepsy did not develop in later life, does not necessarily indicate that the infantile spasm was not epileptic in character. It is not at all inconceivable that such a predisposition may be overcome by the organism, just as we see predispositions overcome in other somatic and psychic diseases. In connection with the infantile spasm it is urgently important to observe any accompanying or intercurrent psychic disturbance. Even at this early age, if there is evidence of obliteration or obscuring of con-

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sciousness observable in the more or less fixed stare and immobile pupils, and blank facial expression, there is strong evidence that the phenomenon is epileptic in nature. If such "psychic absence" be noted between convulsive attacks, there is little doubt of the presence of epilepsy.

As the child advances in age the functioning of the various nervous mechanisms becomes more evident. The individual should assume increasing independence and voluntary control. One of the first functions by which we can judge of such progress being made, is the facility with which the child learns to control bowel and bladder. During infancy these functions have been entirely involuntary and mechanical. The time arrives when they must come under the domination of the voluntary system to a great extent. If this does not occur in orderly fashion it is evidenced by bed-wetting continuing in spite of the usual training measures adopted. Such enuresis speaks for a lack of proper integration between the voluntary and involuntary systems—a lack of control by the higher centers. It occurs mostly at night when the higher cerebral centers are in abeyance, and the regulation of these sphincter centers becomes more easily dominated by the autonomic system. Taken along with other symptoms which we have learned to associate particularly with true epilepsy, enuresis (or nycturia) is a symptom of considerable importance; it speaks for an inability on the part of the organism properly to handle its functions, and to adapt itself to the necessities of existence—conditions which are peculiarly true of epilepsy throughout all its manifestations. The observation already made in regard to the infantile spasm is equally true of bed wetting; namely, that the later normal development of the individual who has suffered from bed-wetting in childhood, does not indicate that the symptom may not have been epileptic in nature. The organism having again, as in the spasm-pathology, righted itself, has overcome a morbid predisposition.

When the bed-wetting is of epileptic etiology, it is an expression of the petit mal attack, easily observed. In this it differs from those cases of petit mal, occurring especially at night, which are not accompanied by such easily demonstrable evidence, and which often exist for years without being observed before the grand mal attack makes its appearance. These are the cases in which the grand mal attack seems to appear suddenly and mysteriously out of a clear sky without cause or reason; the truth of the matter is that the petit mal has gone on unobserved.

Wherever we see a tendency towards persistency of autonomic activities—evidence of continued domination of the individual by the sympathetic nervous system—there is need to be suspicious of the development of epilepsy or of dementia præcox. Sleep-walking, while not in itself sufficient to be looked upon with great alarm, nevertheless is evidence of failure of perfectly healthy development between the various parts of the central nervous system. It can quite easily be an evidence of an epileptic constitution.

One of the great difficulties in diagnosing this disease is the fact that the symptoms may go on for years unnoticed. I have been able to secure a history of definite attacks of petit mal in individuals in whom they had been considered of no significance, but in whom they had constituted preliminary evidence of the disease which asserted itself in grosser form later on.

A year ago a child was brought to me with a history of grand mal attacks occurring over a period of three months. The parents insisted that the child had shown no anomalous condition previous to the onset of these attacks. However, upon close questioning, it was learned that during a period of a year and one-half preceding the attacks the parents would be frequently disturbed during the night by a queer sucking sound made by the child. (Autonomic reproduction of the sucking movements of infancy.) On such occasions they would find the child sitting up in bed with a dazed expression, and with the mouth and tongue still going through the motions of sucking. Then she would come to herself, and go quickly into a heavy sleep. It was further learned that this child had always been asocial, inclined to stay to herself, and unable, without marked exhibitions of temper, to have her desires blocked.

In many instances where there is no such obvious evidence of the petit mal attack as in the case just cited, the character anomolies peculiar to the disease may point the way to diagnosis. These character changes, or anomolies, show that the disease process has involved the mental or psychic side of the nervous system and are concomitant with changes or inherent pathology in brain cell and fiber. We must remember always that the organism is a unit. If we bear in mind that normal development of the character and mental apparatus is just as dependent upon healthy growth and integration of the higher reflex mechanism as the normal function of the bladder is dependent upon the healthy integration of the lower reflex arcs presiding over such function, we can readily understand that these character changes, or anomalies, may be as significant in the nervous pathology of epilepsy as is the manifestation of bed-wetting.

It is this anomolous development of the emotional side of the psyche, expressing itself in character deviations, which so peculiarly stamps

the so-called epileptic constitution. Among the more constant character deviations we find marked obstinacy, irritability and unprovoked exhibitions of temper. These may be seen from early infancy. As childhood comes on and social adaptations are demanded, further character anomalies are seen in the increasing selfishness, cruelty, mendacity, impulsiveness, and a general inability to conform to the accepted standards of order and convention. At a later period of development we often find marked religiosity, moodiness and a general superficiality in the realm of the feelings and emotions, added to the character picture.

Constitutional epileptic character anomolies seem to exist and develop as an integral part of the symptomatology. They exist independently of the rapidly progressive mental dilapidation, or dementing process, which we often see in epileptics where the grand mal seizure is more or less violent and frequent. In these latter, the rapid deterioration is, I believe, for the most part, caused by the organic damage sustained by the brain as a result of the capillary engorgements and ecchymotic hemorrhages incident to the convulsion. When this dementing process is thus precipitated, the already existing developmental character anomolies naturally come out in stronger relief.

There are cases of epilepsy which seem to be ushered in at puberty or during adolescence, or even later, by the sudden appearance of major convulsions. This happens at times in individuals in whom it is extremely difficult to demonstrate either marked character anomolies, or other evidence of the person having been previously epileptic. Such cases are relatively rare, and in some of them I think we may assume that nocturnal petit mal attacks have existed previously, and have never been noted. In my experience, this assumption is strengthened by the fact that the grand mal attack, when it does come, has been invariably, in its first attacks, of the nocturnal type. In individuals in whom we have demonstrated no antecedent clinical petit mal, this nocturnal grand mal may soon be followed by attacks occurring at any time. Again, in these suddenly developing cases in later life, we can very often demonstrate definite endocrine disturbance, usually pituitary or thyroid; and, of course, we are all familiar with the cases where uremic and vascular changes may be the precipitating factors. These cases bring us into the symptomatic types of epilepsy, with which we are not concerned in this paper, except to separate from them those which have already shown a marked epileptic predisposition, and in whom these super-added lesions have made the latent disease apparent. The stress of puberty and adolescence likewise is frequently the signal for the appearance of grand mal attacks in individuals who have previously exhibited one or more of such symptoms as infantile spasms, bed-wetting, night terrors, sleep-walking and character changes above mentioned.

The adolescent period brings out the inherent epileptic weakness in strikingly the same manner that puberty or adolescence brings out in the predisposed individual, latent dementia præcox or hysteria. When in dementia præcox we elicit a history of such pre-adolescent qualities as the shut-in or asocial seclusive personality described by Meyer, excessive scrupulosity, indecision, marked suggestibility, etc., we recognize these as early pathognomonic forerunners of the disease. In hysteria, as well, we find an equally well-defined pre-symptomatology, indicating the hysterical personality. This highly emotional, oversensitive, neurotic individual, is familiar to us all, and we are not surprised at the later development of major hysterical symptoms in such a case.

If we bear in mind what happens in a grand mal convulsion of known origin, such as occurs in uremia, or during an infectious disease, we are presented with data which enable us to understand the nervous mechanism back of the convulsion in true epilepsy. In the convulsion of uremic or toxic etiology, we know that the brain cortex is seriously affected; and we believe that the convulsion supervenes mainly because of the crippling of the controlling effect of the cortex and the upper neurons over the entire voluntary system. There is an apparent identity in mechanism of such a toxic convulsion with that of true epilepsy. It would seem, then, that we have demonstrated in this convulsion of toxic origin, the same kind of nervous dysfunction which supervenes in true epilepsy because of developmental or inherent instability of the corticospinal system. This inherent instability may be revealed through innumerable causes. If we carry the analogy further, and take a typical example of epilepsy of the Jacksonian type—one in which there is irritation of a portion of the motor cortex by reason of a tumor or depressed fracture—we see a local paralyzing effect, observable in the tonic and clonic spasm of an extremity, or isolated muscle group. This is a demonstration of epileptic mechanism, generally without loss of consciousness, produced by suspension of control in a limited area of the cortex. In a uremic convulsion, on the other

hand, we have a similar mechanism, with loss of consciousness produced by suspension of control in a widespread area of the cortex. If we remember that when a lesion such as a tumor is located in a position of the brain other than that involving the motor system, particularly the frontal area, we may have attacks involving consciousness precisely similar to the psychic equivalent attacks which occur in true epilepsy, we have a working hypothesis of the essential neuropathology underlying the psychic attack. This attack would seem to be due, in the main, to a focal dysfunctioning of a portion of the brain, probably frontal. In both essential epilepsy and that of true Jacksonian character we know that the aura which precipitates, or introduces, the attack may be either psychic or motor in type. In either case, where cortical control is entirely removed, we have an explanation for those peculiar autonomic and automatic activities, which lend such variety to the epileptic seizure, in the fact that the instinctive submerged or subconscious activities, ordinarily suppressed and controlled by the higher cortical centers, break through at this time of cortical abeyance. These automatic processes, at times psychic and again chiefly motor, may present themselves independently (constituting an attack) occurring in and constituting the aura, or coming out during the major convulsion or following it, and may be correlated with more or less transient abeyance of various segments of cortical control, or with involvement of the cortex as a whole.

DISCUSSION

DR. GEORGE W. SMELTZ (Pittsburgh, Pa.): I have been very much interested in the study of Dr. Wholey's paper, and the method by which he presents to us anew this old and time-worn subject of epilepsy.

Like so many other conditions involving consciousness and producing conduct disorders, epilepsy has furnished for ages a fertile soil out of which grew all manner of superstition as evidenced historically by the many erroneous and bizarre ideas concerning its interpretation.

In more recent times the scientific approach to the problem of epilepsy has taken place from almost every conceivable angle, until indeed there is little remaining of the human organism which has not at some time or another come under suspicion as being the offending member, and now finally after a long series of scientific trials with many errors, we still find ourselves sufficiently ignorant as to the true nature of this disease.

This, I believe, has been due, in part, to the failure in marshalling all of the already known factors involved in the epileptic picture, into some such broader concept as has been set forth in Dr. Wholey's paper.

In this connection the doctor launches us at once upon the nervous substrata as being the great participating factor in the epileptic manifestation, pointing out roughly the nervous system's two main functional divisions and indicating, as he has, that in the epileptic syndrome there is a disturbance somewhere somehow, between the interactive balance of these two systems.

When we consider that the nervous system, taken as a whole, is, after all, nothing more than a great integrative mechanism—that is, a complicated system of wiring up, so to speak, of all of the component parts of the organism into a coöperative life unity, it becomes plain that such a profound and universal organic reaction as takes place, for example, in the grand mal attack could not occur except as the result of some cross-sectioning influence on this neutral background upon which Dr. Wholey takes his stand.

In stressing the essential nervous character of this disease, as set forth in his paper, the doctor has laid the anatomical and physiological foundations for that still broader kinetic concept, as formulated by Dr. L. Pierce Clarke, namely, that epilepsy represents "a life reaction disorder."

Now such a reaction can be considered primarily only in terms of energy, and as such, represents all of the dynamic forces of the organism. The nervous system not being an energy producer itself, functions only in properly balancing, coördinating and integrating the forces of the organism as they stream through the lower vegetative levels to the higher sensorimotor and psychic levels.

Now what bearing does this dysfunction between the different levels of the nervous system have, as pointed out by Dr. Wholey, when considered in connection with the dynamics of the organism, in offering an explanation of the epileptic phenomenon?

A dysfunction at any particular level within the nervous mechanism would result not only in the blocking, but also in the accumulation of energy below such level. The intensity of such accumulation would be in direct proportion to the higher systems' inability to absorb and properly distribute the energies pouring in from below, until such a point of intensity is reached as to make further accumulations incompatible with the life of the organism, and discharge must take place, as it does, at a lower biological level. This, it would seem, is what occurs in the so-called epileptic fit.

From a biological standpoint it would seem reasonable, therefore, to infer, as Dr. Wholey has, that one of the principal vulnerable points in the functional activity of the organism should be at that level of interaction between the two main divisions of the nervous system—the autonomic or involuntary system and the cerebrospinal, or voluntary system. The latter, however, is an outgrowth of the former and represents a more recently evolved and for that reason a less well perfected mechanism. It stands out as one of the more radical lines of departure, the *new* from the *old*, both in structure and function.

It is at these points of departure, where new and untried functions are being acquired, that one may reasonably look to as the potential points in the production of epilepsy. So it is at birth and throughout early infancy, when there is suddenly thrust upon the organism the necessity for utilizing the new and untried channel of energy intake, such, for example, as the newly established functions of the alimentary tract.

At this period, as Dr. Wholey observes, there is little functional development of the higher centers and practically none on the psychic level. Which means that the child's first real vital contact with the outside world is by way of the respiratory and alimentary tracts. In these newly acquired vegetative functions

one may reasonably expect difficulties which may be at least potential factors in the production of the epileptic reaction. But this does not mean that a gastro-intestinal disturbance is the predominating cause of epilepsy. While experience would indicate that it is not an uncommon factor in infancy, it must, however, be remembered that there is a constant shifting to new lines of departure all along the pathway of growth and development, requiring new and sometimes radical adjustments; as at puberty, adolescence and the changes incident to the involutionary period, together with many internal and external factors, as mentioned by Dr. Wholey, and other influences acting on up through the higher psychic levels and on out into the environment itself.

This latter statement, I know, is not in accord with the opinion of most authorities on epilepsy. But I am fully convinced, nevertheless, from my own experience with soldiers, both in the army and since, that, other things being equal, the so-called normally constituted individual may react in an epileptic way when faced with those radical environmental departures that pertained to the lives of many while facing conditions as they were at the front. The mechanism is just the same, and just as real as that having to do with the organic deviations within the organism itself.

Dr. Wholey's paper opens up so many points for thought and discussion, as for example, character anomalies, which too, are in keeping with the theory of faulty distribution of energy on the psychic level, the relationship in mechanism to other types of life reaction disorders as dementia præcox and the lesser reaction, hysteria. But time does not permit more than the mere mention of these!

In conclusion we may observe further that Dr. Wholey has not given us a lead to anything very definite or encouraging to which we may tie for the more practical purposes of treatment. And yet in another sense this is the most important inference to be drawn from his discussion. For it is obvious that there could not be anything like a universal panacea that would be at all in keeping with the broad mechanistic concept with which he explains the nature of epilepsy.

The range of etiological possibilities is great, and all of the factors therein need to be carefully evaluated and correlated if possible. But too often harm comes to the epileptic through the hands of those who would remove the cause of the fit, or at least suppress the fit at any cost as though that were the whole problem in the cure of epilepsy.

Dr. J. P. Crozer Griffith (Philadelphia, Pa.): It seems to me that the neurologists and the pediatrists view from an entirely different standpoint this question of the development of epilepsy in infancy. The neurologist has cases coming to him of undoubted epilepsy, and in tracing them back he finds that some of them appear to have begun in infancy; and from this he is disposed to draw the conclusion that epilepsy is a disease dating from this time of life. The pediatrist, on the other hand, sees a host of children who had convulsions in early life and never later, and he knows he cannot call such cases epileptic.

Why do not adults, when they suffer, for instance, from some digestive disturbance, develop a convulsion? That they do not, we know; while there are numbers of infants and children who do so suffer. It is clear that there must be something in the element of the time of life which is a predisposing factor; and that there is something essentially different between the convulsions of early life and those which are seen later and are denominated epilepsy is beyond doubt. The question is, can we find out what this is? I think we can do so very well. There exists in early life the well-known condition called "spasmophilia," in which there is a disposition to the development of convulsions or a convulsive condition, from very slight causes. In this diathesis there exists a deficiency in the calcium content of the blood. As the child grows older this spasmophilia disappears, and the tendency to convulsions ceases. It is, of course, perfectly possible that some of the convulsive subjects are in reality suffering from an early epileptic condition, although this is something which requires further proof. What is certain, however, is that the ordinary spasmophilic convulsions cease with advancing age.

Dr. E. E. Mayer (Pittsburgh, Pa.): Every physician is interested in the epileptic, and naturally takes up this problem in the way he is accustomed to look upon disease. Dr. Griffith introduces his comments upon Dr. Wholey's paper with the statement that the neurologist and the pediatrician speak different languages. It is true that we do not know the basic facts about the epilepsies. But it is also true that no physician misunderstands another when we speak of their clinical symptoms. These we readily visualize. To me, therefore, the language is not a different one.

I do not see any real difference between Dr. Wholey's views and those of Dr. Griffith, as each is simply taking up a different phase of the question. Admitting that deficient calcium brings on convulsions, why does it not do so in all children who have a deficiency of calcium? Why does the deficient calcium produce those hyperkinetic results on the part of the brain rind which we call convulsions?

That question Dr. Wholey has taken up. He is not ruling out a chemical change as a causative factor, but from a biological point of view is trying to conceive what is happening. I might even presume to say that this is necessary, inasmuch as there are other causes for epileptiform attacks besides an altered calcium coefficient. A spasmophile liability may mean much or little to a physician. To me it does not cover the whole problem. The phylogenetic factors which make for physiological differences cannot be ignored. In no set of diseases, it seems to me, are they more important than in the epilepsies. Spasmophilia does not explain every type of epilepsy. Is it not, therefore, proper to try to find out what in the cortex of the brain is responsible for convulsive seizures?

Dr. A. G. Mitchell (Philadelphia, Pa.): I did not intend to discuss this paper. There are, however, several points about the question of convulsions in infancy which have been of great interest to me. The first thing is the great number of children who have convulsions. It seems to me quite evident that we cannot blame all these convulsions on epilepsy. It is an outstanding fact that a great many infants and children have convulsions who never develop epilepsy. This fact must be explained.

Another fact which is a definite clinical observation is that convulsions are not at all frequent in the first six months of life but are frequent after that time and up to two years of age. Certainly, we cannot blame this age incidence upon imperfect development of the nervous system, because if this were the only reason, convulsions should be more common in the first six months of life than thereafter. Epilepsy, to me, is an indefinite thing etiologically, whereas the condition which we speak of as spasmophilia has a quite definite explanation. If we remember that there are certain salts which act as nervous depressants, we can readily understand that if the body contains less of

these salts than normally should be present, we should expect a condition of hyperexcitability of the nervous system. This is what happens in the spasmophilic subject. There is a dimunition of the calcium, and because of a lack of its depressant action, the child is prone to convulsions. Of course, it should be remembered that spasmophilia does not always express itself in convulsions; the symptoms may be the laryngospasm or tetany. I cannot go into the question of symptomotology and the diagnosis by electrical reactions.

At the Children's Hospital in Philadelphia we have studied a number of children who have had convulsions without a definite organic cause and we have followed these children for a period of two or three years and found that they do not have convulsions after they have passed the spasmophilic age. It does not seem fair to me to consider an infant who has convulsions as an epileptic, unless there is a very strong family history to substantiate this and unless study reveals that the child is not spasmophilic.

DR. JOHN H. W. RHEIN (Philadelphia, Pa.): I have been very much interested in this discussion because it deals with the subject of convulsions in children from two angles, namely that of the neurologist and the pediatrist. The pediatrist sees these cases early, while the neurologist only sees those which have not proved to be simply expressions of spasmophilia, and the cases come under his observation at a later period. I have seen cases which I regarded as epilepsy which from the history would have been regarded, I am sure, in the early stages of the disease as spasmophilia and which seemed, beyond peradventure or doubt, cases of epilepsy when they finally arrived under my observation at the age of four or five or later.

When there are recurrent convulsions in infants and young children, where reflex causes can be eliminated and calcium elimination is not changed and there is no organic disease to account for the convulsions, it is proper, I believe, to regard these cases as very likely to develop into epilepsy if the recurrent convulsions cannot be stopped. It is of the greatest importance that the recurrence of convulsive attacks should be broken up in order to avoid the habit of convulsions.

DR. PERCIVAL NICHOLSON (Ardmore, Pa.): As far as I can see, the whole crux of the matter is that pediatrists see a large number of cases with convulsions which are not subsequently proved to be epilepics. These cases the neurologist never sees. If they were treated for spasmophilia a number of them, at least, would never arrive at the stage when they would be seen by the neurologist. I have seen a large number of these cases which had very definite convulsions, and which had gotten over them entirely by treatment with calcium chloride.

Dr. Rhein says, "What can you do with spasmophyliacs?" I would give them large doses of calcium chloride and get their nutrition to its highest efficiency, and the question would be largely solved as to whether they were affected with spasmophilia or whether they would go on to true epilepsy.

DR. WHOLEY (in closing): The discussion has taken a rather different turn from that which I thought my paper would suggest. It seems to have centered largely about the question as to whether convulsions mean epilepsy or not. I had thought that my paper was sufficiently clear in the statement that a convulsion, or spasm is not in itself sufficient evidence to indicate epilepsy. It was my purpose to direct attention to the type of individual constitutionally disposed in his nervous mechanisms to reactions of an epileptic character. These reactions may be in response to a great variety of causes—inherent imbalance between the various components of the nervous system, toxic causes, psychic or emotional barriers to adaptation, etc.

In the child's early life, before its mental faculties and emotional equipment have sufficiently developed to be capable of expressing noticeable epileptic reactions, we are largely dependent for our evidence of epilepsy upon the gross spasmodic upheaval. This manifestation, whether essentially epileptic or not, represents a break in the integrated, harmonious nervous activity which is characteristic of normal functioning. It represents a breakdown in the organisms' ability to dispose of energy in an orderly way. If this disruption is found to be of perverted biochemical etiology, as that observed in spasmophilia, we do not, of course, label the child as epileptic, but we must remember that he has reacted in a way which suggests a possible inherent epileptic trend or tendency, even though the nature of his spasms appears to be essentially different from that characteristic of true epilepsy. The separation of that group of cases which can rightly be classified as spasmophiliac marks another advance in our understanding of spasmodic reactions and incidentally further clears the field for the study of epilepsy. It is important, however, to guard against being lulled into a feeling of security by overstressing the spasmophiliac conception. The demarcation should be and I think can be fairly sharply drawn in the majority of cases.

The observation of Dr. Mitchell regarding the comparative infrequency of spasms during the first six months of infancy is probably due to the fact that most mothers are able to supply the nursing infant with nourishment adequate in quality and quantity for this length of time. This period of six months marks the average time when extra stress is placed upon the infant's nervous system because of a break-down in proper nourishment, etc., and spasms represent the inability of the organism to handle the situation.

In dealing with epilepsy we frequently discover causes, such as endocrine imbalance, the correction of which often produces a very marked cessation of at least the convulsive seizures. Such factors unfortunately are usually precipitating agents in an individual already possessing the epileptic predisposition. The purpose of my paper has been to arouse more interest in the understanding of this predisposition, or background of epilepsy and to suggest some of the possible nervous mechanisms underlying the disease and its symptoms. Time will not allow further discussion of the other points raised, but I believe that what I have said covers the chief questions brought up in the discussions.

REPORT OF A CASE OF RAYNAUD'S DISEASE IN A CHILD*

ALFRED HAND, M.D., AND JAMES J. REILLY, M.D.

PHILADELPHIA, PA.

Case 1: Geo. H., 5 years old, colored, was admitted to our service at the Children's Hospital

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April 16, 1922, having pain in the fingers and toes, with blackish discoloration. The boy had previously been under the occasional observation of the physicians in the outpatient department, the first visit having been made when he was six months old because of snuffles. At his ninth visit, shortly after he was a year old, a Wassermann test was made with a strongly positive result. A month later he was brought with acute cervical adenitis, and after ten months with chronic conjunctivitis. In his third year he was seen three times with eczema, and later for a second degree burn. The history was also obtained, on admission, that in 1920, when about three years of age he had had measles, mumps and whooping-cough.

As for the family history, the mother reported no miscarriage; one child by the first, and three by the second husband, all of them living, the patient being next to the youngest. Other important items in this connection, which could not be elicited at first, will be given later.

The day before his admission, the patient got up from bed, put on his shoes and walked down stairs. A few minutes later, his grandmother, who is his caretaker, heard him crying and saw him sit down and take off his shoes. The toes were then seen to be discolored, ranging from a slate to a dead black hue, with an area of redness immediately adjacent proximally. According to a friend who saw him then and accompanied him to the hospital the next day, the black discoloration was increasing in extent; and a similar condition had been present in the fingers of both hands each morning (4/15 and 4/16) for about an hour. During the discoloration the fingers were cold. Handling of them did not cause the boy to complain; but even a light touch on the toes, which felt very cold, caused instant crying.

Examination on admission showed a gangrenous appearance of the first four toes of each foot with a small black area on the inner side of the left little toe, the little toe of the right foot appearing normal; the color of the affected regions was a bluish-grey, forming a striking contrast with the brown skin of the negro. For 4 1/2 cm. on the dorsum of the left foot, and a little further on the right, the bluish-grey color extended up, with mottling of red areas, to a band of redness, 1 cm. broad, which stretched across the foot. The sole showed a distinct pink discoloration half way to the heel. Pulsations could be felt easily in the anterior and posterior tibial arteries of each leg.

The cervical, axillary and inguinal glands were sufficiently enlarged to be palpated. The skin of the hands had a parchment-like, wrinkled appearance. The lungs were clear but there was poor expansion at the left base. There were no heart-murmurs but a distinct thrill could be felt over the body of the heart. The spleen could not be felt. The liver was enlarged, extending 7 cm. below the costal margin in the midclavicular line, and the edge of the left lobe could be felt at the level of the umbilicus. The urine was obtained immediately and tested for sugar, with a negative reaction. There was a faint trace of albumin with about ten leukocytes to each field under the high power; no casts; specific gravity, 1015; reaction, acid.

A blood-count gave red cells, 4,190,000; white cells, 15,500; hb., 64%. The differential



Raynand's disease; one month after onset.

count showed neutrophiles 59%, lymphocytes 28%, large mononuclears 2%, transitionals 9%, eosinophiles 1%, basophiles 1%. A blood-culture showed no growth in five days' incubation. The Wassermann reaction was strongly positive.

At the time of admission there was fever, with a maximum of 102°, for 36 hours, when it subsided to normal and remained so for nearly four weeks. When we first saw the boy, it seemed as though there would be considerable loss of tissue (nearly all of the toes and perhaps part of each foot) from the gangrenous process; but thirty hours later a faint degree of improvement was noticed, consisting of a reddish brown mottling, appearing first on the plantar surface of the great toes. This improvement progressed very

slowly but steadily during the next three months and it was a novel experience for all of us to see areas that had been dead-black for weeks slowly regain normal color.

Four days after admission, the skin of the hands began to be exfoliated and a desquamation was found to be starting all over the body. It was impossible to get any history of exposure to scarlet fever and examination of the other children at home was negative, but this did not prevent us from making a positive diagnosis of the disease and isolating the patient at once. Confirmation of this diagnosis was recently obtained by one of us (R.) when seeing the patient at home, the mother then admitting that she had not told us the truth for fear the boy would not be admitted to the hospital, but that shortly before the start of the gangrene, two uncles, 12 and 14 years old, had been taken from the house to the Municipal Hospital with scarlet fever.

While the improvement in the local condition was slow, it was sufficiently advanced in two weeks for the surgeons to say that it was no longer necessary to consider the possibility of surgical intervention being needed. The toes could now be handled without pain, and although the skin was coal-black over most of the toes, the affected areas were steadily lessening.

One month after admission a severe intercurrent Klebs-Loeffler infection rendered it necessary to send him to the Municipal Hospital for 2 1/2 weeks. At the end of this time he was returned to us in good condition, the left foot showing no evidence of gangrene, but over the formerly blackened areas the skin was unpigmented and almost white. On the right foot the second and third toes had black caps of gangrenous skin over the pulpy parts of the toes, a little pus being pressed out from under the cap on the third toe. It was a month later before these were detached, a slight loss in bulk being noticeable in the tips of the toes.

Before maintaining the provisional diagnosis of Raynaud's disease, made when the patient was first seen, it was necessary to know more exactly what Raynaud included under the term "symmetrical gangrene," and the first article consulted was the masterly one by Osler in his "Modern Medicine." This led us to persist in the diagnosis, and a recent exhaustive story of the literature makes us feel that the case is rightly classed in that group which Raynaud described as having its cause in a faulty innervation of the capillary vessels (cette espèce de gangrène a sa cause dans un vice d'innervation des vaisseaux capillaires) and not dependent upon senile, syphilitic or other endarteritis, thrombosis, embolism, diabetes or the adynamia following wasting diseases. The main features of the symptoms are their intermittent appearance and their symmetry; and the case described above presented both of these, the fingers of both hands having shown local syncope on the first and second days for an hour at a time and the distribution on these as well as on the feet being symmetrical.

It will be well, at this point, to treat for a moment the relationship between the symmetrical gangrene of our patient and the coexistent scarlet fever and hereditary syphilis. With regard to the acute infectious diseases (scarlet, typhoid, typhus, etc.) in the course of which Raynaud's disease has been seen, Cassirer in his classic monograph gives a thorough discussion, disagreeing with those who hold that the Raynaud syndrome is not a disease *sui generis* but is always based on some other "soil" prepared by infectious diseases or by a neurosis or by organic nervous diseases. Cassirer holds that it is hardly right to class these as typical cases, because they may depend on some change or other in the composition of the blood of which we have at present no knowledge, and that it is better to put them in the group called by Monro, "Raynaud's disease due to a morbid blood state." There are two reasons why, in the present case, it would seem that the relationship between the scarlet fever and the Raynaud's disease was only coincidental, not causal; the first, a theoretical one, is that if there was a causal relationship in this case, then Raynaud's disease ought to be a much more frequent complication of scarlet fever than has yet appeared, especially when the great incidence of both diseases in the first decade of life is considered (Raynaud himself calling his disease "juvenile gangrene"); the second, probably of greater weight, is that two other members of the family (illustrating the family predisposition observed by some authors) have had symptoms of Raynaud's disease without any history of scarlet fever. The notes of these cases are as follows:

Case II: William H., 2½ years old, younger brother of Case I, was seen on April 19, 1922, and examined for evidences of scarlet faver, with a negative result. The fingers of both hands were moderately cyanotic and had been painful. This condition had always been noted in him on cold days. He was admitted to the hospital and kept under observation, without any further symptoms developing.

Case III: John H., 8½ years, brother of Cases I and II, was seen by one of us (R.) at the Philadelphia General Hospital. He was admitted to this institution February 12, 1918, at the age of 4 years, with a diagnosis of gangrene of all the toes and left hand. The history was that in 1918 he had an attack starting like George's, which involved all the toes and left hand. Ten days after admission, beginning gangrene of the

right hand was noted. Spontaneous amputation of right foot occurred three weeks after entering hospital. On March 28, 1918, amputation of left foot and both hands was done in an attempt to check the disease process. Gangrene of all the stumps necessitated reamputation three weeks later. On December 28, 1919, a gangrenous condition of the tip of the nose was noted. The Wassermann was positive. A recent conversation with patient's mother elicited the information that John has enjoyed good health for the past two years.

The relationship between the hereditary lues in these cases (both parents have positive Wassermanns) and the development of Raynaud's disease is more difficult of evaluation and, as Cassirer remarks, "single cases have a very varied significance." With the exception of snuffles in Case I during infancy, none of the three children present any signs of syphilis and the diagnosis is therefore a Wassermann one. Mercurial treatment in Case I could not be pushed during the scarlatinal desquamation for obvious reasons, but it was deemed safe to administer the soluble bichlorid in dose of 1/100 grain three times a day, keeping careful watch on the renal function. After the patient's return from the Municipal Hospital, convalescent from diphtheria, half-drachm inunctions were given once a day for five weeks and were well tolerated but were without influence on the Wassermann reaction. Those who think that congenital syphilis exerts an influence in the development of Raynaud's disease, speak of the possibility of changes in the minute blood vessels and attribute the ultimate mechanism to these changes; but this does not explain the intermittency and the symmetry which, as has been stated, are essential to the diagnosis. It must be borne in mind that the majority of cases of Raynaud's disease thus far reported have been antecedent to the Wassermann test. It is desirable, as Tridon remarks in his Paris Thesis, that henceforth all cases of Raynaud's disease should have a Wassermann test made as a routine procedure. In time, then, safe conclusions may be drawn; but at present, according to Castellino and Cardi, in 306 cases syphilis was present in 22, or 7%. The existence of a syphilitic change in the small blood vessels would, if Raynaud's own description is to stand, exclude all of those cases from the category of his disease; but it is conceivable that the syphilitic infection could produce its influence in a way harmonious with Raynaud's specifications, i. e., by a toxic action on the vasomotor centers making them susceptible to the external reflex stimulation (e. g., cold).

DISCUSSION

Dr. E. L. Kiesel (Scranton, Pa.): When one considers Raynaud's disease as undefined pathology brought about by a vasomotor neurosis without known anatomical basis, it is almost self-evident that the cause of this vasomotor instability is unknown.

Dr. Hand and Dr. Reilly think that congenital syphilis does bring about such a condition.

Tredon, in his report of Raynaud's disease in 39 cases in children, found but one patient suffering with lues. Munro's and Cassirer's statistics are similar. In Buchanan's review of the histories of 67 patients at the Mayo Clinic, all gave negative histories for syphilis and all had negative blood Wassermann reactions. Barlow, in reporting a case suspected of having hereditary syphilis states that there are so many cases in which syphilis can be excluded that at most we can only reckon it as one among many other favoring conditions.

It has been frequently noted that asthma, angioneurotic edema and migraine occur simultaneously with Raynaud's disease. The relationship is so close that many consider these to be symptoms of Raynaud's. The association of Raynaud's with these spastic conditions might (perhaps) be explained by Eppinger and Hess' study of the reciprocal relation of the vagotonic and sympathetic system. Eppinger and Hess draw the following conclusions from their researches:

Under normal conditions a reciprocal relation exists between the vagotonic and sympathetic systems. A disturbance in the action of either system brings about a change in the other. This change in the latter accounts for the transient character of these spastic conditions.

The internal secretions are correlated in order to maintain a proper influence on the vagotonic or sympathetic systems. The internal secretions are differentiated simply in their selective action on the tissues, adrenalin stimulating the entire sympathetic system, the remaining secretions possessing a more individual action. The existence in the body of a substance (hormone) possessing properties antagonistic to adrenalin is very probable. In cases of angioneurotic edema and asthma, I have found that a hypodermic injection of adrenalin chloride will give prompt relief. As this is only a temporary measure it will be necessary to go farther and seek that agent which stimulates the antagonistic nervous system in some ways or diminishes its action in others before we have made any headway. Whether this agent is a protein substance acting dirently on the nervous system, or whether the glands of internal secretion are the leading factor, is still an unsolved problem.

Recent observations tend to prove that Raynaud's disease also occurs internally. Let me quote as an example, a case which occurred in Scranton:

A baby, eight months old, presenting all the symptoms of intussusception and so diagnosed, was sent to the hospital for operation. At the time of operation spastic ileus was found. A close inspection of the small intestine revealed a tonic spasm of all the smooth muscle, including that of the blood vessels. The tissues were pale and bloodless and presented a perfect example of local syncope. It is very probable that the spastic ileus was caused by a tetanic condition of the sympathetic nerve, thus causing a contraction of the gut and blood vessels.

Dr. Percival Nicholson (Ardmore, Pa.): I recently reported before the Philadelphia Pediatric Society the case of a boy four months of age suffering with typical Raynaud's disease. Cyanosis was very marked from the finger tips to the elbows in both arms, and from the toes to the knees in both legs. He was

a well-nourished child. The aunt of this child, having been a trained nurse, early noted paleness and coldness of the extremities long before the condition progressed to the stage of cyanosis. The child had a negative Wassermann and no symptoms except attacks of marked cyanosis and coldness of the extremities initiated by minor reflex influences on the superficial surface, causing local contraction of the superficial blood vessels. This particular child was treated during attacks by a method which was advocated by Barlow—one extremity at a time was immersed in a tepid solution of salt water. One pole of the galvanic current was placed in the solution and one over the extremity above the cyanosis and the child given as many miliamperes as it could stand. The child reacted very promptly to the treatment, which relieved the attacks. The attacks recurred, but became less marked until at present there are none.

I had the pleasure of seeing this case which Dr. Hand and Dr. Reilly have reported, and I think the symptoms and physical findings definitely point to its being Raynaud's disease. It has the characteristics of Raynaud's gangrene. There are two types of gangrene in Raynaud's disease—one in which blebs are formed, and the other in which the area simply becomes indurated and dark in color and dries up. In both of these types it is surprising how small an amount of damage is done when the eschar is removed, as in the case reported by Hand and Reilly.

There have been positive Wassermanns reported in a number of cases of Raynaud's disease, probably not directly causing, but certainly closely associated with Raynaud's disease.

While there have been a number of cases in children of Raynaud's disease, it is not a common disease. The average occurrence of Raynaud's disease is about one to three thousand. Osler reported in 20,000 cases, 19 cases of Raynaud's disease. I think there are a very large number of cases of Raynaud's disease, however, that have not been reported and the number is probably much higher than given in these statistics.

A logical form of treatment is the administration of calcium chloride, as a rather prominent symptom of Raynaud's disease is the irritability of the vasomotor center. Most cases clear up and do very well; the prognosis is almost always good.

I have, myself, some doubt as to the last case Dr. Reilly reported being a true Raynaud's disease, for three reasons: (1) The rapid appearance of the gangrene; (2) the gangrene being so very great in extent, which is not characteristic of the ordinary Raynaud's disease; and (3) the subsequent extensive and progressive involvement.

DR. HAND (in closing): We did not intend to say that Raynaud's disease is a common disease of childhood, this being the first case that we have seen, but its greatest incidence is in childhood, as Raynaud emphasized in his original thesis, a copy of which is here shown, one of his illustrations bearing a striking similarity to the photographs of our patient now in the hands of those here present.

As to the relationship the syphilitic infection in our patient and in his brothers bears to the occurrence of Raynaud's disease, we endeavored to refrain from expressing a positive opinion, as we do not see how this question can be settled. Castellino and Cardi collected 306 cases, 22 of which were syphilitic—a rather small percentage if syphilis has any causal influence—and A. J. Buch reports from the Mayo Clinic 67 cases, all with negative Wassermanns.

DR. REILLY (in closing): Dr. Kiesel has spoken of a condition known as internal Raynaud's disease. Personally, I have never seen this condition, and Dr. Hand also told me that he has never seen it. As to whether or not there is such a thing as an internal Raynaud's disease we do not know.

Dr. Nicholson questions the diagnosis in the third case. Possibly that is partly my fault. When I was talking to the grandmother of this child the other day, she informed me that case, No. 3, had been brought to the Children's Hospital of Philadelphia two or three months previous to being admitted to the Philadelphia Hospital to be treated for blueness and swelling of both hands and feet. On each occasion, the interne told the mother that they would keep the case under observation, giving at the time a dose of oil.

THREE YEARS' EXPERIENCE WITH THICK CEREAL FEEDINGS IN INFANCY IN MALNUTRITION AND ALLIED CONDITIONS*

HAROLD R. MIXSELL, M.D.

NEW YORK, N. Y.

In August, 1919, I reported in the Archives of Pediatrics 12 cases of malnutrition in infancy fed by means of a thick cereal formula. In August, 1920, a second report added 10 more cases to this series. Up to the present writing I have had over a hundred various cases in private practice fed on thick cereal, and have observed many more at the New York Nursery and Child's Hospital. Since 1919 this method has been used extensively, and with varying results, most of them favorable, not only in New York City, but in other parts of the country. To such an extent has it been used that it is now regarded as a valuable addition to our armamentarium for difficult feeding cases and allied conditions. It must, however, be regarded as an additional method to be used in selected cases, and *not* as a panacea for all our feeding troubles.

HISTORICAL: The author claims no especial originality in introducing this method. He has, however, revived and possibly popularized an old one. It is really a reversion to one of the early methods of infant feeding prevalent during the Elizabethan period, and during the centuries preceding it. In those days breast feeding was practically the only way of nourishing an infant or a young child. Cow's milk was seldom used, as it was regarded as poisonous; and very rightly too, as sanitation and the care of fresh milk was at that time at a very low ebb. As a general rule the artificial foods were limited to beer soup, water pap (bread and baked flour soaked in water) and pulse, which was a combination of peas, beans and lentils. In these last two mix-

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tures, pap and pulse, we have combinations quite similar to those employed in the thick cereal, and the vegetable soup mixtures of the present day.

Preparation of the Cereal Feeding: My stock formula is made up as follows: One per cent skimmed milk is used as the liquid basis of the mixture. It has been my experience, and this has been noted by many others, that babies with any degree of malnutrition, whether long continued or temporary, will not tolerate or assimilate fat well. To confirm this in my series, a number of stool examinations were done on cases fed on fairly high fat, before they were put on thick cereal. Fat indigestion was noted in almost every case. Other factors which influence me in using skimmed milk are its comparatively high sugar, proteid and salts content, in comparison to whole milk, and its actual food value of 12 to 13 calories per ounce. If the cereal is cooked in water these needed calories, salts, sugar and proteid are lost.

The cereal used by preference is farina. This is advocated on account of its colloidal (glutinous) qualities and its extreme tenaciousness. Although farina is less soluble and has less protected colloids than rice, I use it on account of this tenaciousness and because of the fact that to get the same resulting thick mixture almost twice as much rice flour is needed. The proportion of the mixture is as follows: One level tablespoon of farina is used to 5 or 6 ounces of skimmed milk. In very young infants or prematures, the skimmed milk may be diluted with water half and half. We have had a number of such cases at the Nursery and Child's Hospital. Our statistics show, however, less gain on partially thick mixtures than there is on the thick feeding. Cane sugar and dextrimaltose are then added, using at first 2 level tablespoonfuls of dextrimaltose and 1 level tablespoonful of cane sugar to 30 ounces of the mixture. All this is cooked together for 30 to 60 minutes, using either a single or a double boiler until the resulting mixture is so thick and tenacious that it *will just barely fall off an inverted spoon*. Thorough cooking is an absolute requisite. If cooking is not thorough, owing to the encouragement of a saccharolytic flora the baby may get up a diarrhea and accordingly will not gain.

Chemistry of the Polycarbohydrates: As a rule there is not the increase in the number of stools which one would expect to find from the higher sugar and starch content of the mixture. The reverse, or a tendency to constipation is usually the rule. This is probably due to these factors: Starch in solution acts as a protective colloid and in this way prevents the formation of hard indigestible casein curds. This colloidal action is due to the soluble starch itself and not to the salts or the cellulose in suspension. In addition it has long been a recognized fact that a combination of several carbohydrates in the same food can be given without taxing the power of the organism to utilize sugar, whereas when a single carbohydrate is used this may not be the case. The farina mixture being a "polycarbohydrate" mixture of milk sugar, malt sugar, cane sugar, dexterin and starch, comes under this category. The malt sugar is absorbed first, then the cane sugar and milk sugar, next the dexterins and finally the starch. The absorption is slow and continues for a long time, and the organism is enabled to utilize its sugar without being upset by a sudden overdose. Accordingly the infant gains and there is no tendency towards diarrhea which might result from feeding it with a large amount of a single carbohydrate. It is obvious therefore, that the probable reason that infants can take carbohydrate in the form of starch (farina) when they cannot take it in the form of dexterins and sugars, is that the molecular structure of starch is more complicated than that of the dexterins and the sugars. The more complicated the structure of a carbohydrate is, the more numerous are the steps in its breaking down to its end products. There is therefore, less fermentable material in the intestines at one time, and less opportunity is afforded for fermentation to get the upper hand.

Examination of the Stools: This was done in 4 of my cases to determine the carbohydrate utilization of the infant during the thick cereal feedings. The method used was as follows (Method used by Miss Hilda Croll, New York Postgraduate Hospital, Dr. Chapin's Service): The combined stools for the period are extracted by a thorough mixing of cold water, and by bringing the mixture to the boiling point in a flask. A small portion of this water extract is saturated with dry picric acid, and 3 c.c. portions are heated with 1 c.c. of 22 per cent sodium carbonate in a test tube, in a boiling water bath for 20 minutes. After dilution, the red-brown color produced by the reduction of sodium picrate to sodium picrinate is compared in a colorimeter with a standard glucose solution similarly treated. The soluble reducing sugar is thus determined in terms of glucose. Nonreducing soluble sugar is determined by heating 3 c.c. of the extract with picric acid alone for 10 minutes, and then heating with sodium bicarbonate. The picric acid inverts any cane sugar to reducing sugar. The original mixture of the stools with water is boiled with approximately .06 per cent normal hydrochloric acid for 2 hours, cooled and neutralized, and a portion of

the filtrate is saturated with dry picric acid; one to three c.c. are heated with sodium carbonate as for soluble reducing sugar. The total carbonate of the stool is changed to reducing sugar by this acid hydrolysis and is expressed as glucose. The percentage utilization of carbohydrate in these 4 cases fed on farina, skimmed milk, dextrimaltose and cane sugar was: 97.8, 98, 99.4 and 98.6 per cent respectively. These percentages follow very closely Chapin's 2 cases, which utilized 99.3 and 97.6 per cent. As compared with the findings of Pease and Rose (*Am. Jour. Dis. Chil.*, xiv, 1917) there was very little difference. They found utilizations in normal children, fed on mixed diets, of 97.2 to 99.5 per cent of the carbohydrates. It seems plain then, that the thick cereal babies utilized their carbohydrates as well as the carbohydrates in an ordinary mixed diet were utilized by a normal healthy baby.

EXAMINATION OF THE URINE: Repeated urinary examinations have been done on these infants, and there has been no indication of glycosuria following the high intake of carbohydrate.

ADMINISTRATION OF THE THICK CEREAL: The activity of the amylolytic and diastatic ferments in the digestive tract of the newborn infant has long been recognized. From birth onward there is a rapid increase in an infant's capacity to digest starch, until by the eighth or ninth month of life this capacity is fully developed. Because of this fact, starch has not been added to the infant's dietary until the fourth or the fifth month, and then in the form of barley water or a similar diluent. It is my contention, however, that infants even as young as a week tolerate starch, and tolerate it well. This view is borne out by both Graves and Chapin in different series reported by them.

When first put on a thick feeding there is usually some difficulty in getting the baby to take the spoon feeding. To overcome this difficulty the cane sugar being much sweeter than the dextrimaltose should be increased for the time being, and the baby will then generally take it. Incidentally there may be gagging, and in some cases vomiting, until the infant is accustomed to such a radical change in its diet. The method of administration is simple. I use either the handle of a small spoon, or a small wooden tongue blade. The cereal is placed on the back of the infant's tongue, thus facilitating swallowing. At first this may prove tedious for the nurse, and it may take her from one-half to one hour to feed the baby. Gradually, however, the baby takes it with avidity. If a thinner mixture is to be given, a nipple with large holes may be used, either with a bottle or alone, using a tongue blade to force it through the nipple. The amount to be given of course varies. I generally start in with 70 to 80 calories per pound of body weight, divided into the requisite number of feedings for the child's age. (Incidentally each ounce of the mixture contains about 24 calories per ounce.) Either 3- or 4-hour intervals may be employed, and in accordance with the calories, from 2 to 4 ounces are given at a time. One may find that a larger allowance may be demanded and tolerated to maintain a satisfactory gain. I have run the calories as high as 100 per pound with no bad effects, but of course for no great length of time. When the child is well accustomed to the mixture and has started to gain, from 1 to 3 ounces of a green vegetable puree is added directly to the cereal. This may be used as early as the third month. String beans, spinach, carrots, celery and young turnips are the vegetables of choice. These supply not only a few extra calories, but also salts, and the antineuritic or water soluble B vitamin. The combination of these factors acts as an added incentive to increased growth, and to nutritional improvement and turgor. It is important to give orange or prune juice to these infants from the very inception of the thick cereal feedings, to counteract any possible tendency to scurvy, and incidentally to aid in bowel elimination. In this connection I have found dextrimaltose No. 3 of aid in counteracting constipation where it occurs.

In regard to the length of time that one can keep a child on thick cereal there is no fixed rule. In one of my cases it was continued for 8 months with good success. Naturally other articles of diet were added from time to time, the vegetables in particular being emphasized. In most of the cases it seemed best to make a change back to a milk formula within a month's time, dry milk being used in the majority of cases as a bridge between the cereal and whole milk, the rationale of its use being its low fat and high sugar content. Naturally this change must be done slowly and carefully, the thick cereal being continued twice a day as the child's regular cereal. When the infant is weaned from the thick feeding one will usually find that he has *gotten into the habit of gaining,* and the change back to milk seldom affects him badly.

WATER ADMINISTRATION: To supply the water deficiency of this diet in these babies there should be given boiled water in amounts up to 4 ounces three or four times a day. In vomiting babies, this may be given with or without a stomach tube, and then preferably at night, as they seem to retain it better then. However, in a number of my cases, and Graves has had the same experience, no water whatsoever was given

even during the hot part of the summer. These babies did not seem to get particularly thirsty, there was no edema or evidence of water retention, and normal urine was passed in normal quantities.

Indications for Its Use: I have used this feeding in the following types of cases: 1, Malnutrition (marasmus); 2, pylorospasm (mild and severe); 3, pyloric stenosis; 4, breast fed colic cases (as an A. C. feeding); 5, persistent vomiting (neuropathic); 6, idiosyncrasy for breast milk, and for cow's milk; 7, liquid food intolerance; 8, acute gastritis with vomiting; 9, eczema and allied skin conditions; 10, acute ileocolitis with vomiting; 11, prematurity with defective assimilation; 12, acute infectious fevers.

CASE REPORTS

On account of the shortness of time allotted to this paper I will cite only two illustrative cases, both of which demonstrate the practical application of thick cereal feeding.

Case 1. Age 4½ months, male, born February 24th. Birth weight 7 lbs., 12 ozs. Second child, one miscarriage, full-term normal baby. Labor normal. Family history negative. Was nursed 10 days. This was stopped because the nurse told the mother that her milk was bad. At this time the baby's weight was 7 lbs., 10 ozs. First formula: milk 6½ ounces, barley water 13 ounces, lime water 1½ ounces, milk sugar 3 teaspoonfuls. The baby was kept on this for 2 days, the breast being supplemented with 2 ounces of this formula 7 times a day. On March 12th (16 days old) he vomited after every feeding and had frequent green stools. He was taken off the breast entirely and a weaker formula was given of milk 7 ounces, barley water 17 ounces, lime water 1½ ounces, milk sugar 1½ ounces. Of this, 3½ ounces were given every 3 hours. The vomiting, which was nonprojectile in character, still continued, however, and on March 24th a change of doctors was made. At this time the weight was 7 lbs., 8 ozs., or a loss of 4 ounces since birth. A new formula of 1½ ounces off the top of 3 bottles of Walker-Gordon milk, water 11 ounces, lime water 4½ ounces, was ordered; 2½ ounces were given every 3 hours, 8 feedings. This was increased on March 29th to the upper 2 ounces of 3 bottles. There was no change in the formula until May 16th, and during this period the baby was not weighed, bathed or touched by the doctor's advice. As the vomiting still persisted and the parents were getting very worried, another doctor was called in on May 17th. The weight was found to be 9 lbs., 4 ozs. Barley water for one day was ordered, and then milk 16 ounces, boiled water 15 ounces, and lime water 1 ounce. Four ounces at 8 feedings were given. One week later 8 tablespoonfuls of Mellin's food were added. From May 24th to July 8th the formula was gradually increased, until when seen by me, the baby was on milk 18 ounces, water 17 ounces, Imperial Granum 3 teaspoonfuls, lime water 1 ounce, dextrimaltose No. 3, 3 teaspoonfuls. During this period the child had continued to spit up and had failed to gain normally. Various forms of sugar had all been tried with no success. The weight on July 6th was 10 lbs., 4 ozs.

When seen on July 8th physical examination was negative with the exception of craniotabes and a rather marked degree of emaciation for a 5½-months-old infant. There were no masses in the abdomen, no peristaltic wave, and absolutely no evidences of either pylorospasm or pyloric stenosis. My tentative diagnoses were either cow's milk idiosyncrasy, or gastric indigestion from high fat feedings.

Accordingly a formula was ordered of 25 ounces of 1 per cent milk, 8 ounces of water, 3 level tablespoonfuls of dextrimaltose No. 3. This was boiled 3 minutes and 5½ ounces were given 6 times a day every 4 hours. This formula did not relieve the vomiting but the baby did gain to 11 lbs., 3 ozs. on July 20th, or 15 ounces in 12 days. At this time 2 drops of a 1 to 1000 solution of atropin were added to each bottle. This tended to improve the vomiting temporarily but there was no gain. Finally on July 31st, the baby was put on the following formulæ:

1 per cent milk .....17 ounces
Water .....3 ounces
Dextrimaltose No. 3 ...1½ tablespoonfuls
Atropin (1-1000 sol.) .....12 minims

6½ ounces at 6 a. m., 10 a. m. and 10 p. m.

1 per cent milk .....15 ounces
Farina .....2½ tablespoonfuls
Granulated sugar .....2 tablespoonfuls

This was boiled 30 minutes, divided into 2 feedings, and fed with a spoon at 2 p. m. and 6 p. m.

The weight on July 31st was 11 lbs., 2 ozs. As there was still a small amount of vomiting after the atropin-skimmed-milk feedings, on August 2d there were given 5 feedings of the thick cereal in the above proportion of 1 to 6. The vomiting absolutely stopped and the baby started to gain with a rush. The weights for the weeks following were:

July	31	11 lbs.,	2 ozs.
August	1	11 "	8 "
"	2	11 "	12 "
"	4	11 "	14 "
"	7	12 "	1 "
"	12	12 "	6 "
"	17	12 "	14 "
"	24	13 "	3 "
"	31	13 "	14 "
September	7	14 "	4 "
"	21	15 "	6 "

In 8 weeks' time this baby gained 68 ounces, an average of 8½ ounces a week, there was no distention or edema, and he became bright and normal in every way. No water was given him during that period. He was gradually changed over to a semi-solid diet and at the age of one year weighed 24 pounds.

Case 2. Age 10 weeks, male, born March 6th, second child, full term, normal baby, birth weight 7 lbs., 8 ozs. Family history negative. Was nursed 4 weeks and then weaned. A formula of dryco, dextrimaltose and water was ordered. This was gradually increased until when seen by me at 10 weeks he was being fed dryco 4 tablespoonfuls, boiled water 4 ounces, dextrimaltose 2 teaspoonfuls. He was given 7 feedings every 3 hours and had been getting enough calories per pound, the estimated calories being over 65.

Examination revealed a physically normal child, but marantic in appearance, weighing 8 lbs., 12 ozs. There had never been any evidences of indigestion and the failure to gain was the chief source of worry to the parents.

This child was put on a thick cereal feeding of skimmed milk 26 ounces, farina 4 level tablespoonfuls, and granulated sugar 2 level tablespoonfuls. This was boiled 30 minutes, and 3 tablespoonfuls were given at 6, 10, 2, 6 and 10. This was gradually increased to 2 per cent milk 27 ounces, farina 5 tablespoonfuls, 2 tablespoonfuls of granulated sugar, 1½ tablespoonfuls of dextrimaltose; and later 1 tablespoonful of spinach or string beans. An immediate change for the better followed. The weights for the 10 weeks following were:

May	22	8	lbs.,	12	ozs.
"	29	9	"	9	"
June	5	10	"	1	"
"	12	10	"	7	"
"	19	10	"	12	"
"	26 (spinach added)	11	"	3½	"
July	3	11	"	12	"
"	10	12	"	4	"
"	17	12	"	12	"
"	24	13	"	5	"
"	31	13	"	14	"

In 10 weeks this child gained 82 ounces, or an average of 8¼ ounces a week. In appearance he changed from a sallow, undernourished, marantic child, to a fat, rosy, happy one.

Naturally all cases do not respond to treatment as these two cases did. We get some comparative failures and the feeding is *not* infallible. It is interesting to see how this method affects the after life of the child. The children I have had on it seem, if anything, to be healthier and sturdier than the strictly milk-fed ones, and seem to resist disease somewhat better. This is undoubtedly due to the mixed diet at an early age. This, however, is empiric reasoning.

A word in regard to two other high calory methods of feeding—the Czerny-Kleinschmidt and the Karo Syrup whole lactic acid feedings: We have used both of these methods successfully in hospitals and private practice, but it is my personal impression that they have a more limited use than thick cereal, and also that they cannot be continued for as long a time without bad effect.

From my experience the following conclusions may be drawn:

1. A method of feeding certain difficult feeding cases is here reported.

2. Its use at present comprises a range of 12 different types of cases.

3. This method of feeding has been proved to be a valuable adjunct to our knowledge of infant feeding.

161 East 64th Street.

DISCUSSION

Dr. A. Graeme Mitchell (Philadelphia, Pa.): I have been much interested in hearing this paper on one phase of the important subject of infant feeding. Most of us have used the farina mixture for the treatment of pylorospasm and pyloric stenosis, but it has remained for Dr. Mixsell to emphasize the very distinct place for this food in a number of other conditions.

Dr. Mixsell suggested to me that I compare this food with the butter-flour mixture of Czerney and Kleinschmidt. In order to do this I have calculated the strength of the ingredients in the farina mixture as recommended in the paper and find that there is about 1% of fat, 14.5% of carbohydrate and a little over 4% of protein. Each ounce of the mixture would have a caloric value of about 27. In the mixture of butter-flour which we have used at the Children's Hospital in Philadelphia the percentage strength of fat has been about 4.5%, of carbohydrate about 8, of the protein about 1.5, and the caloric value about 24.5 to the ounce. At first glance then it would seem that these two foods are quite different, and yet further analysis will show that in both of them cognizance is taken of the same principles.

In the first place it has been recognized that fat is often the ingredient of cow's milk which is difficult of digestion. In the farina mixture this has been obviated by giving a low fat, in the butter-flour mixture by giving a fat so modified that the irritating fatty acids are to a large extent removed, thus allowing the administration of a larger percentage of fat. The lessening of the fatty acid percentage in the butter-flour mixture is accomplished by using boiled butter.

In the second place a variety of carbohydrates are given in each mixture, 5 in the farina mixture (lactose, starch, dextrin, maltose, sucrose) and 3 in the butter-flour mixture (lactose, starch, sucrose). The advantages of a polycarbohydrate mixture have been very well brought out by Dr. Mixsell. Besides the non-fermentable quality of starch and the fact that it spreads the process of digestion over a greater length of intestine, there are other advantages. Thus, caloric value is raised considerably and a marked protective action is exerted for the digestion of fat. Just what this protective action is, has never been satisfactorily explained, but it is a pronounced clinical fact. It can often be demonstrated that an infant who is having difficulty in digesting a certain percentage of fat, can digest that same amount of fat when starch is added to mixture. Carbohydrates such as sugar and starches can, to a certain extent and for a certain length of time, practically take the place of fat in the economy, provided that enough fat is present to supply the fat soluble vitamin. Experiments performed by Osborne and Mendel (Joun. Biol. Chem., 1912, xii, 81) show that growth continues on fat-free diets. Just how long one should continue to supply a food in which corbohydrate takes the place of starch to a considerable extent is a question. My own feeling is that when there is normal digestion fat should be given in reasonable amounts and that when there is fat indigestion the aim should be to attempt to establish a tolerance for fat by gradually increasing the amount present in the food.

In the third place (to continue the comparison of the two foods) it is noticed that in both the butter-flour and the farina mixtures there is cooking of the food. While cooking is done for the purpose of rendering the starch more digestible it also accomplishes the same thing for the protein in that it prevents the formation of large tough curds. The farina mixture has a much larger percentage of protein than the butter-flour mixture, which to my mind is an advantage in favor of the farina mixture. The caloric value of the two foods is about the same.

I am trying very hard not to enter into a discussion of infant feeding in general, but I cannot resist the opportunity to say that the ideal artificial food for the well infant recognizes several criteria. Briefly stated,

these are (1) digestibility; (2) sufficient fluid content; (3) the presence of vitamins; (4) sufficient caloric value for the age, weight, and activity; (5) a moderate amount of fat which will supply sufficient for the fat needs but not be enough to cause indigestion, thus allowing for the difference in the chemistry of cow's milk and human milk; (6) carbohydrate as sugar up to 6%, with the addition of starch for its additional caloric value and its protective action on the digestion of fat; (7) protein which is present in moderate amount and in excess of the percentage present in breast milk, thus allowing for the relative paucity of the essential amino acids present in cow's milk as compared to breast milk; (8) the proper amounts of salts.

In the abnormal infant, digestibility becomes the prime object, and the amounts of fat, carbohydrate, protein and salts and their quality must be altered, and caloric value temporarily assumes a secondary place.

If one will study a case in question with the above principles in mind he will usually be able to find the proper food for the individual, sick or well. That, after all, is the secret of success. As Dr. Mixsell says, the farina mixture is not a panacea. This applies to all food mixtures—they must be given to the properly selected case.

I should like to say one more word about the use of starch in the infant's dietary. Its advantages have already been pointed out. It contributes very largely to the success of the farina mixture. I believe that starch should always be given in such form as barley water or other cereal diluent to artificially fed infants by the third month of life, and that by the sixth month a cereal, such as cream of wheat or farina, may be given by spoon feeding. It would seem that the only contraindication to the use of starch in the food is the presence of undigested starch in the stool. This can always be easily determined by the simple expedient of dropping iodin on the stool, a blue discoloration indicating the presence of unconverted starch. Some pediatricians do not hesitate to continue to give starch even though it is recovered unchanged in the stool. I should like to ask Dr. Mixsell whether many of his cases showed undigested starch and whether he considers this a contraindication to the farina mixture. In this connection it is well to remember that it is possible to obtain good results with mixtures containing lesser amounts of farina.

In Dr. Mixsell's case reports it is seen how the farina mixture may be given in various ways. Thus, 1 or 2 feedings a day may be given in place of the ordinary milk mixture which is employed at the other feedings, or the strength of the milk used may be varied so that different percentages of fat and protein are obtainable, or, as has been stated, the amount of starch may be varied.

I should like to say that it has been a privilege to discuss this paper, and I think that the Society is to be congratulated on persuading Dr. Mixsell to come over here and address us.

Dr. Edward L. Bauer (Philadelphia, Pa.): Dr. Mixsell has given us a lucid outline of his work and we are grateful to him for it.

I have tried the thick farina cereal feedings and have met with success, largely due to the teaching of Dr. Mixsell and also to the teaching of Dr. Sauer.

I have only one or two minor practical points to which I wish to call your attention. One is the possibility of cooking the farina for a longer period of time. I have found that if it is cooked from two to four hours children can take larger quantities and still give the same evidence of complete digestibility. The making of this formula can be done by the woman with an average mind, despite the fact that in most homes the women do not seem to know how to cook any more. Another point is I have found it rather easy to fill up a sterile nipple with cotton, letting the baby suck the farina off the tip of the nipple. He can do this without much effort and with no choking.

Dr. Percival Nicholson (Ardmore, Pa.): For two years and a half, shortly after Dr. Sauer's paper, I have been using this cereal feeding. I think cooking much longer in making the preparation is very important. In several cases in which thick cereal feeding was being carried out the children continued to vomit, and on going myself into the diet kitchen I was able to stop that vomiting by careful supervision of the preparation of the formula. We are boiling the milk and the water with the farina and the sugar for about fifteen minutes over a gas flame. We then add water to make an ounce or two more than the quantity we started with, and allow the whole mixture to cook one hour in a double boiler. It is very important, if possible, so to gauge the quantity of water you add before you cook the mixture in the double boiler that the finished product will have the right volume; otherwise it does not mix homogeneously.

Our experience with this thick cereal feeding has been most successful, not only in pylorospasm but in malnutrition in general. I think it is very easy to start with a 1% milk, and to increase the percentage of fat in your mixture without necessarily changing over to some other formula; and you can gradually lower the percentage of carbohydrates without making any radical changes. The results in apparently real pyloric stenosis cases, which the x-rays showed to be markedly involved, were very remarkable, and I have gotten so now that in all cases of suspected pylorospasm or stenosis I routinely put them on thick cereal feeding, and if they do not respond I consider an operation.

There is one thing I should like to ask Dr. Mixsell, and that is whether he has encountered very much temperature in feeding his thick cereal cases on these high cereal feedings? I have not had such an experience except in dehydrated children who needed water.

It has been very interesting to me to hear the paper, because I think this is one of the most interesting types of feeding, covering a multitude of problems which are very hard to meet by other types of feeding.

Dr. Clifford G. Grulée (Chicago, Ill.): I do not know just how to start discussion on this paper. The ideas as expressed, of course, are somewhat different from those I have. In the first place, I am rather abandoning the idea of looking into the question of digestion and I think more from a metabolic standpoint. It has been pretty well shown by investigation in the last fifteen or twenty years that the digestion of fat is quite well taken care of in the gastro-intestinal tract of the infant. This was not so well recognized with starch, but in the last few years these young infants have been shown to take care of starch from a digestive standpoint very well. The question of whether or not a certain method of feeding should be adopted depends upon several different things. In the first place, it depends upon its simplicity. It is true that we should not abandon any method of treatment that is complicated simply because it is complicated; but it seems to me if any method of treatment is to be widely employed, and employed to the greatest good of the greatest number, it is much better that it should be a simple method than that it should be a complicated

one. The method of administration, too, is of a very great deal of value in this respect. In other words, if you can get the same results with simpler methods, your usefulness is much greater.

This matter of thick cereal feeding, of course, has been with us for a very long while. Dr. Sauer, I think, took it up after Helmholz and others had used it. My impression is that even among its most ardent advocates there is a tendency to use it less and less, except for pylorospasm where the thick cereal feeding is used very largely, and where I think it is right that it should be used largely, my statements yesterday to the contrary notwithstanding, because in the home it would be exceedingly difficult to carry out the type of treatment of pylorospasm which I mentioned, and certainly certain cases of pylorospasm react very well to thick cereal feeding.

Whether or not this thick cereal feeding which Dr. Mixsell has brought out is of value, depends a great deal upon the mastery which a man has of the method. We have simply thought that we could set forth a method and some man could take it up and use it and it would be all right. That is not possible. In my opinion it is absolutely necessary, if a man is going to have ultimate success, for him to have a complete mastery of the methods that he uses. In Dr. Mixsell's hands thick cereal feeding might be of a great deal of value, perhaps more than any other type. I doubt very much if I could get the same results that I could with albumin milk. I do not mean this in the way of criticism at all; I simply mean that I am familiar with the use of albumin milk, and I think that, to a large extent, explains the difference of opinion regarding success and failure in infant feeding.

Dr. Robert K. Rewalt (Williamsport, Pa.): I have listened with a great deal of interest to Dr. Mixsell's paper. I have been very much interested in this subject of thick cereal feeding for infants during the past year and have used it in sixteen cases. I have varied somewhat in the preparation of this food from the method Dr. Mixsell uses, in that I found that with the skim milk the babies did not gain so well, and by using so much smaller proportions of whole milk they seemed to do a great deal better. Of course, I realize that in a small series of cases such as I have had, one is somewhat handicapped in drawing very many conclusions. I have also boiled the farina with water a longer period of time in a double boiler, from one to two hours, and then have added the milk, but only cooked the milk in the solution ten minutes. I should like to ask Dr. Mixsell whether there is any set order of preparation for this food?

Dr. Mixsell (in closing): I have very little to add. I am very glad to get the opinion of the men who discussed the paper. Dr. Mitchell only attempted to explain the difference between the farina and the butterflour mixtures, so I shall not go into his discussion at all.

To Dr. Bauer I would say, I have advocated boiling the mixture only thirty to sixty minutes because I think the child digests it as readily as he would if cooked longer. I do not see any possible objection to boiling the farina two or three hours if you wish, possibly to break down the starch a bit more thoroughly, and then adding your milk afterwards and boiling it for thirty minutes. However, I do not think it is necessary and in some cases it is rather a tedious thing to do.

To answer Dr. Rewalt: we always start with skim milk and then gradually increase to whole milk mixtures as was mentioned by one of the other men. That can be done slowly until finally whole milk is given, and as Dr. Rewalt has said, a smaller quantity can be given if one uses whole milk. The proportion, however, is important. I think it is fairly fool proof. You can, if necessary, show the mother or the nurse how it should be made, devoting half an hour or an hour to its preparation, and it is rather a simple thing to put your ingredients in your double or single boiler and boil it up. That is about all there is to it.

In answer to Dr. Nicholson: I have never had any cases of a rise in temperature. Even during the heat of the summer, with very little water given, I have not seen any rises.

Dr. Grulee is perfectly correct when he says that one cannot regard this as a method to be used by everybody and in every kind of a case. I personally feel that you or anybody else can use it as well as I. As a matter of fact, I do not suppose I put a child on thick cereal more than once a month or even less. I always attempt to use a whole milk mixture and feed them normally. This method is a thing to be used when you see the child slipping away from you, and it really does work in a great number of cases. A great many of the men are using it in New York, and they all agree that it is a good thing to fall back upon when you are in a quandary.

SOME PRINCIPLES INVOLVED IN THE BRONCHOSCOPIC REMOVAL OF FOREIGN BODIES

WITH ILLUSTRATIVE CASES*

F. J. BISHOP, M.D.

SCRANTON, PA.

In presenting this paper, the writer wishes to inform you that he has nothing new to offer. There are, however, several interesting cases that have come to his attention during the last few years, which he wishes to report and to place on record. The main object is to call your attention to the results that may be obtained by the ordinary physician who has been instructed in the use of the scopes and then applies this knowledge as the various cases present themselves.

Before a Society or Section such as this, it is not necessary to argue for the many advantages of these scopes. The pioneers in this branch of science, such as Doctors Jackson, Ellen Patterson and others, have emphasized many times their wide application in bronchial and esophageal work. In spite of this, there are many physicians who have never seen these scopes used and others who do not appreciate the ease of application in many of their cases. I believe that until such time as the great majority of physicians are informed, we cannot too often advocate their use.

* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

In order to emphasize this point more forcibly, let us consider the histories of a few of the cases. A patient with a nickel in the esophagus was advised "to wait five days." This child was unable to swallow food and could drink water only with the greatest difficulty. Another child was treated for 33 days as a case of fever and cough. When this child came into the office a very clear-cut history was obtained that pointed to the onset of the trouble resulting from a peanut kernel in the bronchus. Sometime later another case came to my attention in which an external esophagostomy was done for the removal of a nickel.

We know of a grown-up who for the last four months has had a half dollar just below the pharyngeus, and moreover, will not have it removed. These are a few of the striking examples that only too frequently happen.

Occasionally the patient is subjected to drastic measures by the general practitioner. This is illustrated by a child three years old, who had a tin whistle in the upper part of the esophagus. Three separate attempts were made in two days under a general ether anesthetic, without success. On the third day, without an anesthetic, the foreign body was removed by bronchoscopic methods with very little trouble.

Many other histories might be recited. I only wish to emphasize that this condition is not a local one, but applies to many sections of this country, as any one who investigates will learn. It behooves us, the members of this section, in our contact with the general practitioner, to advise and suggest in these or in any other doubtful cases, the early and more frequent use of the scopes. This is my earnest plea.

Let us consider the essential requirements for successful work along this line. An accurate knowledge of the anatomy of the parts must be the foundation. An individual with natural mechanical aptitude has the advantage, for it is essential to have perfect coördination between the hands and the eyes and a ready and familiar manipulation of the instruments. Judgment must be exercised in the selection of the forceps and instruments required for each individual case. Last but not least, perfect team work is necessary.

In our foreign body work, we carefully follow the teachings of our leader. Up to the present time, we have given no anesthetic either local or general.

Inasmuch as we learn more through failures than successes, I wish to report at this time one case. As it is not a very pleasant subject, I will make it as brief as possible. Dr. Hollister and I journeyed to a neighboring city to remove a carpet tack from the left bronchus. The patient, a boy six years old, had had this tack in the bronchus five weeks. We had a large audience of about twenty physicians and several nurses. Anticipating the necessity of sponges, one of the nurses was instructed in the use of a sponge holder. Upon introducing a 5 mm. tube considerable secretion was encountered and, at this time, it was found that one of the sponge holders had become broken. A second sponge holder was used and upon its removal no sponge was found. After several minutes, the sponge was finally removed from the bronchus by forceps. I asked for another sponge. You can imagine my chagrin when I was told that the second sponge holder had also been broken. Unwilling to grasp the tack without seeing the point, I desisted.

Up to this time, no reports have been made in the literature as to the examination of broken backs or necks by the scope method. Being curious as to whether any damage might be done to the esophagus, trachea, or bronchus, I availed myself of every opportunity presented. So far, we have scoped three cases, two necks and one back. The results were disappointing, as we were unable to discern any damage done to any of these organs.

CASE REPORTS

(1) Specific stricture of esophagus lower third, unable to swallow fluids, dilated treatment improved, able to take fluids and solids. One and one-half years later died of pneumonia.

(2) American Federation Labor button. Esophagus, B. W., girl three years old, 24 hours, pin open, removed.

(3) M. M., girl 18 months, collar button, esophagus, four days.

(4) Stella R., 2½ years, girl. Nickel, esophagus, six days.

(5) Baby C. Three months old, girl. Needle, postpharyngeal space.

(6) Margaret Y. Girl 13 years. Quarter in esophagus, two years, had to wash all foods with water.

(7) O. P. Male, three years, whistle, esophagus, three days.

(8) E. P., Girl 19 months, peanut kernel, right bronchus, 33 days.

(9) M. W. Girl 4½ years. Two one-cent pieces, esophagus, five days.

220 Connell Bldg.

DISCUSSION

Dr. Ellen J. Patterson (Pittsburgh, Pa.): Dr. Bishop is to be congratulated upon the presentation of a timely paper and the successful outcome of the cases reported.

It is urgent that the general practitioner be informed of the recent developments that have enormously increased the value of the endoscopic method of removal of foreign bodies; also, as to endoscopic diagnosis and treatment of diseases. This I think is slowly coming to pass, judging by the numbers of doubtful cases being referred for diagnosis.

The essayist speaks of the mechanical problems. In this connection I find difficulty in convincing the laity and the general medical men of the necessity for obtaining a radiogram and physical examination just previous to endoscopy. They fail to appreciate the fact that for speedy and safe removal of foreign bodies one needs careful study of the case for localization. It is essential to know the shape, size and character of the foreign body to be removed; its location, its relation to the bronchial tree and the part presenting. This is especially necessary with sharp foreign bodies. I have often been asked to do a bronchoscopy on the basis of a ray film made a week or more before I had seen the case. If possible a radiographic examination for verification should be made within a few hours of the bronchoscopy, lest the foreign body may have shifted its position. Sometimes the foreign body proves to be other than the patient thinks he aspirated.

The essayist does not say that he repeated bronchoscopy on his tack case, but we congratulate him on his patience and self-control in desisting and repeating the effort later with safety for the child's life. One is always tempted to prolong a bronchoscopy in a difficult case.

I think it would be wise if the general practitioner, instead of advising the patient to forget about it, would refer all cases to the radiographer and let him take the responsibility of saying whether or not the foreign body is present.

I appreciate Dr. Bishop's remarks about team work because I find it absolutely impossible to do endoscopy without trained assistants with whom one is working constantly.

DR. HARRIS PEYTON MOSHER (Boston, Mass.): I thank Dr. Bishop for including me in his remarks during the paper. I am surprised at the slowness with which this work is making its way with the general practitioner. They are still very slow in accepting these methods. I think one important point is the use of the proper forceps. Don't attempt to get a foreign body out unless you have the right kind of forceps. A second point is suction. Suction is a life saver, not only in the work in the esophagus but in connection with the work in the trachea. The largest amount of money so far reported as lodged in the esophagus was 25c; but my assistant had a case of a little boy in whom he found two quarters side by side.

SELECTIONS

PERSONALITY STUDY OF A "WITCH DOCTOR," NOW A CONVICT*

N. S. YAWGER, M.D.

PHILADELPHIA, PA.

In December of 1920, the New York papers narrated the incident of an old woman in Pennsylvania who was obliged to appeal to the local authorities for protection from her neighbors, by reason of the charge that she was a witch and was casting such spells over their horses, cows and pigs, that they died. Commenting on this report, a New York neurologist (Casamajor, Louis: Neurol. Bullet., April, 1921, Vol. III, No. 4, p. 128) said: "The mind in Pennsylvania in 1920 can be very little different than that in Salem 250 years ago." That we are at present in an era when belief in witchcraft is intensified is a fact, and that sections of our state are infested with those dominated with such beliefs is also true, but though the situation is troublesome in certain localities, it will probably not become a widespread menace. However, from all countries are coming reports of increased interest and increasing numbers interested in spiritism, occultism and allied beliefs. This may in a measure be due to the reappearance in cycles of such beliefs for reasons we cannot understand, but certainly its presence at this period is to some extent occasioned by the sudden bereavement and longing forced upon so many families through the loss of loved ones during the World War.

That those well poised mentally may with safety investigate this realm of the unknown—assuming that a few such delve into these matters—is probably true, but from time to time one learns of some unstable individual who in this way has become insane. In the past, many crimes were perpetrated upon persons believed to possess evil powers, and occasionally a spiritualist of the extreme type has been found guilty of some criminal act, so that the subject is for us one of much concern.

The horrors of the Salem witchcraft craze and the tortures inflicted upon innocent persons is recalled by the fact that in a short time, 19 persons were hanged and many others were subjected to less severe punishments, and it is hoped that a certain wag had only this branch of the Puritans in mind when he said: "How much better it would have been if the rock had landed on the Pilgrims instead of the Pilgrims landing on the rock!"

On the other hand the extreme fanaticism to which those who believe in witchcraft may go, is shown by the craze in Havana, Cuba, in 1905, when 14 persons were indicted upon the charge of witchcraft, several of whom were convicted, and of those implicated two were put to death. At that time a certain witch doctor demanded the warm heart's blood from a white child in order that the illness of a colored woman might be cured, it being alleged that said illness had resulted from injury inflicted by the whites upon her race during the days of slavery. The white child was slain and a poultice made from its heart's blood was applied to the woman's abdomen, while a decoction made from the heart itself was taken internally (Witchcraft in the Salem Village in 1692: Nevins, Winfield S., 5th

*Read before the Philadelphia Psychiatric Society, March 9, 1923.

ed., p. xliii, 1916. The Salem Press Company, Salem, Mass.).

THE WITCH DOCTOR

This study is of a man who believes himself possessed of supernatural powers, the activities of which in his leisure moments were employed chiefly to heal the sick, and whose efforts were accepted as miraculous by some members of the community where for years he peacefully pursued his art. But eventually, in a state of exereme eroticism, probably induced by the too intimate contact with certain young girls whose presence he claimed was necessary for the working of a charm, his self-control was lost, with the consequence that he was convicted of statutory rape and sentenced to from 5 to 7 years in the Eastern State Penitentiary.

The prisoner is now 61 years of age. He is married, has 5 children, and by trade is a bricklayer. As to his ancestry nothing of interest is known save for the statement that he believes his father "heard voices" and "saw visions." His negative reply to the question as to whether any of his family had been in jail was a lie, since one son had served time in the Huntingdon Reformatory, in Chambersburg jail for burglary, in Franklin County jail for larceny, and 2½ years in the Eastern Penitentiary for larceny and for receiving stolen goods.

In mental make-up the man belongs to what is known as the mystic type—he is distinctly superstitious, believes in tokens, portents, miracles, spooks and in other spectral phenomena. He is crude, suspicious, sly and rather clever at spinning yarns. As to his personal habits, he chews enormous quantities of tobacco, and upon occasions in the past used alcohol to excess, but previously nothing definitely wrong had been noted in his moral sphere. He is a spiritualist, does automatic or so-called spirit writing and receives messages through the activities of the ouija board. But in addition to these supernatural attributes he is a "healer." He believes himself to be the only one of this kind in the country and among his followers the art is familiarly known as "spell-breaking" and "off-casting." The method, he states, can only be revealed to a man by a woman or to a woman by a man and says it is based on the Scriptures—the sixth and seventh Books of Moses—which matter was kept out of the Bible, but that such a volume may be procured at a few book shops. He claims to have successfully employed his supernatural powers in the curing of headache, rheumatism, erysipelas, dropsy, fits and insanity. And in addition to restoring the human subject, he has been successful in treating horses, cows and other livestock.

While there had always been a psychic trend to his mental make-up, it was not until the following circumstances that he was brought to a full knowledge of his powers. When 37 years of age, being an expert bricklayer, he was sent to Toronto to do some difficult work on an oven, and while there had an attack of rheumatism which necessitated his remaining in bed for several weeks. From that illness he found no relief until there was brought to him an old woman, 70 years of age, who administered a faith-cure that consisted of three treatments and after which he recovered promptly. His restorer said he had been sent to her so that she could reveal to him her method of healing. And so one dark night, the first Friday of the new moon, between 12 and 1 o'clock, she took him to a crossroads and there on the ground drew a magic circle about six feet in diameter, in which he was directed to sit. She then sat on his lap, placed her right hand on the top of his head and uttered a few strange words. In relating the incident to me he said: "Man! I thought the world had come to an end! I heard and saw such terrible things—it thundered, the lightning flashed and I saw dragons, elephants, and devils with horns rushing at me through the air." Immediately following this was a period during which he saw only angels and other pleasant sights. The complete hallucinatory episode lasted about three-quarters of an hour, when a state of perfect calm superseded. Since that time he claims to have had unusual powers, and one of these is supernatural healing.

He has the utmost confidence in his "gift" and his face lights with enthusiasm as he describes his many cures. In a burst of confidence he secretly showed me a volume entitled the Book of the Maccabees, stating it had been extracted from the original Bible, and pointing to a certain verse read: "Then, Tobias, taking of the gall of the fish, anointed his father's eyes." It appeared that the father who was blind, in this way had his sight fully restored. Then, hastening to add that he had by the same procedure cured a girl who was as blind as a bat, he expressed the hope that I would employ the method in my practice. The man appears earnest, is pursuasive and rather convincing in his arguments, and these attributes, when blended with some native trickery, have been known to make a strong impression upon those about him who have been denied a liberal education. Through such traits he has obtained a following among some of the prisoners, instances of which I shall cite.

A cellmate who had been in the prison hospital for several days with a swollen and painful jaw but without relief, asked to be returned to his cell. The magician then got in touch with him, made a few strokings over his jaw, repeated some strange words, when almost immediate relief was experienced. Another cellmate who had a headache following a blow on the head, was relieved in the same way. Still another prisoner, whose sweetheart had not visited him at the promised time, quarreled with the witch doctor, claiming that he had cast a spell over his girl, thus preventing her from visiting him, and to avert a fight, it was necessary to remove the cellmate to another cell.

He endeavors secretly to keep suspended about his neck, a so-called charm that is made in a most remarkable way, later to be described. This magic device it is claimed will keep away all diseases and all evil influences.

A few years ago he heard people say they were much terrified by seeing a man without a head on the road between Gettysburg and Waynesboro, and so late one night he repaired to the spot in the hope that he might encounter the object. Surely enough, the apparition appeared, then suddenly vanished into the ground and this phenomenon was repeated several times. One night shortly after at about midnight, he returned to the spot and dug down for a distance of about two and a half feet, when he struck something hard that made a sound like the ringing of a bell. The noise caused some dogs to bark so loudly that they aroused the neighborhood and then he hastily filled the hole and fled. He states that after his release from prison he will return to the spot and dig up that object.

A clergyman living near him had a very pretty wife who was afflicted with some mysterious illness that had baffled the doctors, and so this healer was sent for. The next day being Sunday he warned the clergyman against going to his church as there would be present a woman with black hair who would create so much disturbance that he could not continue to preach. The advice was not heeded by the clergyman, and surely enough there sat a black-haired woman whose presence had such a disconcerting effect upon him that he could scarcely finish his sermon. For a long time the clergyman's wife had suffered from a swollen and painful abdomen from which she could obtain no relief. To overcome this the conjurer placed his hand upon her abdomen, said a few strange words and shortly after the swelling subsided and the pain ceased. He then made further investigation, and finding a lump over her right abdomen, stated to the clergyman that underneath the skin at the swollen point there was a small bunch of black hair, which he could remove, and that then his wife would be perfectly well. After obtaining the clergyman's consent, he removed the bunch of hair, burned it, and the wound healed shortly after. It is believed in the realm of witchcraft that fire promptly and effectually destroys witches. This adept of magic then further explained if the hair had been carelessly thrown upon the ground, the wound could not have healed until the hair had slowly rotted away. The black-haired woman who had been at the church was a former sweetheart of the clergyman's, whom he had jilted shortly before marrying his present wife. But the rejected one had her revenge by casting a spell over the wife, which was accomplished by the cutting off of a lock of her own hair, making it into the form of a bullet, then shooting this into a photograph of the wife, and it was at a corresponding spot in her abdomen wherefrom the bunch of hair was later removed by the witch doctor.

THE CRIME

As the outcome of many minor successes, the magician found his circle of activity enlarging, until finally he was called upon to perform tasks that taxed his uncanny powers to their utmost. Animals as well as people were being relieved of their ills by means of strokings and uttering of strange words, by circumscribing them with lines, but particularly through the wearing of charms. A seal was made by drawing upon paper certain characters fashioned after descriptions found in the writings of Moses, not included in the Bible, and known as the sixth and seventh books. Such a seal when placed in a muslin bag constituted a charm, and it was absolutely essential that the bag to hold the charm be made from "muslin that had never been washed and sewed with thread that had never been knotted." These charms were particularly efficacious in driving out of sick persons the evil spirits that had obtained possession of their bodies, and in the case of human beings they were worn suspended from the neck, while for the lower animals they were placed about the pens and stables. One particularly refractive witch had, it was believed, been operating on the farm for a period of thirty years, and at that time had diffused her witchship throughout the corporal being of a certain hog. For the destruction of this evil spirit the witch doctor proposed that said hog be burned, but to this the owner would not accede. Finally, after people, door knobs and the pigpen had been bedecked with charms, the witch was forced to evacuate the premises and the sick hog recovered.

In the neighborhood of this exorciser there lived a well-to-do family whom from time to time he had served as witch dispeller. But eventually the activities of the witches became so great that single-handed he was unable to cope successfully with them, and so it was explained there was needed the assistance of two innocent young girls. Adjoining the farm of the well-to-do family there was another farm owned by them and tenanted by a distantly related family of reduced circumstances. In this family were two daughters aged 12 and 15 whose presence was desired to aid in the spell breaking. After some doubts and misgivings on the part of the mother, that were met by the assurance that the girls would be as safe in his hands as in the hands of God, they were loaned to play their part in this masterpiece of witch annihilation. And so it was arranged that these sisters should come for the night to the house of the well-to-do family in order that they might touch the hem of the magician's garment and thus strengthen him sufficiently for the task in hand. At the subsequent trial, it was sworn to by these sisters that they had been disrobed and led to the bedroom of the witch doctor, and during the night they were silenced by the threat that if they ever revealed to anyone what was taking place, the consequences to them would be terrible. Early next morning, the three emerged from the bedroom and, accompanied by members of the family, all marched in enforced silence to a near-by woods. Armed with a knife, and a brace and bit, the magician led the way to a certain tree into which he bored two holes. From the head of each girl he cut a lock of hair and after much solemn praying and incantation, these bunches of hair were stuck into the tree and the holes plugged. From the heads of members of the family hair was also taken and treated in a like manner, and this completed the master ceremony for expulsion of the witches. The girls, being superstitious, were fearful of the dire consequences that might befall them if they told of the ordeal through which they had passed, and so maintained silence until two years later, when the elder sister married. Then it was that she revealed to her husband the whole circumstance and he, becoming infuriated, lodged the information with the prosecuting attorney which led to a most sensational trial and conviction.

What is one to conclude from the many claims made that messages are received through mediums, and of apparitions that it is said are seen? Assuming that some of these mediums are honest, are their experiences but tricks played on them by their special senses, that is hallucinations, are they disembodied personalities, or are they the spirit manifestations of those dead? I am not a believer in voices from the dead nor in the existence of spirits about us, though I frankly admit there are many things I do not know and possibly these are some of them. But in this era, students of psychic phenomena are going very far in their statements and extremists in this field of inquiry do not care to have unbelievers present at their seances, which is unfortunate—not that we always doubt their honesty, but we do doubt the correctness of their interpretations. My interest is not in spirits, but in the mental make-up of spiritualists; and famous men, some of them our greatest scientists, are firm believers in the existence of such activities about us. Among these may be mentioned Flammarion, the renowned French astronomer; Professor Richet, now holding the chair of Physiology in the Academy of Medicine in Paris; Sir Oliver Lodge; Sir Arthur Conan Doyle; Sir William Crooks, famous for his tubes in x-ray work; Professor Baron von Schrenck Notzing, the distinguished Munich neurologist; and the great Italian criminologist, Lombroso, now dead. Recently many apparitions have been reported as seen, photographed, felt by the human hand, and it is claimed that in the breath of one the presence of carbon dioxide was chemically demonstrated.

It is difficult to understand the attitude of these great scientists, but sometimes laymen have clear vision, so that Dr. Samuel Johnson in his classic "Rasselas," perhaps showed true insight when he said: "Disorders of the intellect happen much more often than superficial observers will easily believe. Perhaps, if we speak with rigorous exactness, no human mind is in its right state. There is no man whose imagination does not sometimes predominate over his reason, who can regulate his attention wholly by his will, and whose ideas will come and go at his command. No man will be found in whose mind airy notions do not sometimes tyrannize, and force him to hope or fear beyond the limit of sober probability. All power of fancy over reason is a degree of insanity; but while this power is such as we can control and repress, it is not visible to others, nor considered any deprivation of the mental faculties; it is not pronounced madness but when it becomes ungovernable, and apparently influences speech or action."

Occasionally one now reads of parties equipped with photographic outfits and other devices, that have set out to study phenomena in localities where it is said ghosts are seen in the open, or they may investigate other alleged supernatural phenomena in some haunted house.

These matters have become quite the rage and one wonders what next may be reported.

The arguments against spirit messages have been forcefully stated recently by Mr. James Douglas, editor of the *London Sunday Express,* who in substance says: Through all ages the motives for believing in spirits have remained the same—the desire to survive after death, the fear of the unknown and the agony of bereavement. The aboriginal savages believed universally in spirits thousands of years ago, which may be a good reason for our disbelief in them. The spirits say but little and their modest contributions have never been of help in solving great problems. There is the element of chance and possibly the phenomenon of telepathy entering into the question, but the findings of these spirit world students appear largely to result from self-suggestion and self-deception.

It is well known that a few normal persons have frequent and extensive hallucinatory experiences. Cases showing what are called hypnagogic hallucinations have been reported by me (Hypnagogic Hallucinations with Cases Showing These Sane Manifestations: Trans. Amer. Neurol. Assoc., 1918, p. 125). These experiences, usually optical in nature, are observed during the transitional stage from wakening and slumber, in which persons and objects of various kinds, or even panoramic scenes, pass rapidly before the sight. In some individuals such hallucinations are observed with the eyes closed while in others they are seen with them open. These experiences are best explained upon the ground of mental projections, and usually they are so accepted by such individuals.

CONCLUSION

What was the mental status of the witch doctor? At the time of his crime was there sufficient evidence, if known, to justify detention in a hospital for mental diseases; or was his act that of a sane man in a state of spiritualistic fanaticism, who, while in the dangerous environment of his own creation, yielded to temptation, and so rendered himself liable for his crime? The prisoner told me his case was a "frame-up," a claim not infrequently made in prison, especially by sex offenders, but the case was appealed and the verdict was sustained. The act appears to have been that of a degenerate—that is, it was perpetrated by one who had degenerated in the moral sphere, while his intellectual faculties had for the greater part remained intact.

The whereabouts of the witches is unknown, but the witch doctor is still in prison, and the well-to-do family were compelled by the courts to pay more than $15,000 to those whom they had helped injure.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

X-RAY DIAGNOSIS OF PEPTIC ULCER

DR. G. W. GRIER

While the clinical symptoms of peptic ulcer are much the same regardless of what part of the stomach is involved, the x-ray signs are quite different, and for that reason we will consider ulcer in different parts of the stomach and the first portion of the duodenum separately.

Ulcer of Cardia: If the ulcer is situated at the cardiac orifice, the changes will all be in the esophagus. Benign ulcer at the cardiac opening is, of course, very rare and probably cannot be differentiated from malignancy in that location by x-ray examination. The changes consist of a dilatation of the esophagus of greater or less degree, with obstruction at the cardiac opening; as the patient swallows, the meal collects in the esophagus and passes spasmodically through the orifice into the stomach. If the lesion extends into the esophagus, the lower end of that organ will be irregular in outline, as in malignancy, in contradistinction to cardiospasm, where the lower end of the esophagus is smooth. If the ulcer is situated in the cardiac end of the stomach proper, there will be no alteration in the size of the stomach, since there is no obstruction at the pylorus, nor any alteration in position. There will be an alteration in contour corresponding to the location of the ulcer. The crater of the ulcer can usually be seen as a small bulging area, the so-called Houdek's niche. Most of the perforating ulcers we have seen have been on the lesser curvature near the cardia. In this instance there is a small accessory pouch just outside the stomach, and this is connected with the cavity of the stomach by a small canal, giving a very characteristic appearance. Another deformity caused by ulcer about the junction of the cardia with the body of the stomach, is the so-called hour-glass contraction of the stomach, due to extensive cicatrization as the ulcer heals. The name describes the deformity perfectly, there being an upper and lower pouch to the stomach, these connected by a narrow canal. Another deformity occasionally seen in a small mucous ulceration at the cardia without induration or cicatrization is a contraction of the circular muscular fibres at the seat of ulceration, causing a deep indentation opposite the ulcer. This is called an "incisura." It is differentiated from a peristaltic wave by the fact that it remains stationary and identical in one place, whereas a peristaltic wave changes in shape and depth and moves onward toward the pylorus.

Ulcers of the body of the stomach usually occur in one or two forms—the penetrating type, or the chronic indurative type, where the crater of the ulcer is not deep and there is a great deal of induration and cicatrization of the stomach wall over quite a large area, giving a straight rigid appearance to the involved portion. In both these types there is always a partial obstruction of the pylorus, due to spasm, and this results in a dilatation of the stomach, the enlargement being a broadening instead of an elongation as in atony. Due to this change in size and the hypertonicity which accompanies this condition, the position of the stomach is

usually high and more horizontal than is commonly seen and the pyloric end is further to the right.

There is usually a hyperperistalsis in ulcer of the body of the stomach and the peristaltic waves skip the deformed area on the stomach wall, corresponding to the site of the ulcer. There is always a delayed emptying in ulcer in this location, due to the accompanying pylorospasm, and a residue will be found in the stomach six hours after a liquid meal of milk, malted milk or buttermilk and Barium.

Ulcer of the Pyloric End: The same remarks as to size and position apply here as to ulcer in the body of the stomach, with the addition that adhesions to the pyloric end may pull that part of the stomach to the right or up under the liver. The deformity in ulcer near the pylorus is not so characteristic and often has an irregular, indented or notched appearance in place of the small pouch representing the crater of the ulcer. In this region there is also usually a spasm of the musculature near the ulcer, which adds to the deformity, and it may be impossible to relax this spasm even with belladonna. There is usually a hyperperistalsis and a delayed emptying of the stomach with marked pylorospasm.

Ulcer in First Portion of Duodenum: This practically always results in an irregularity in the contour of the duodenum, due partly to cicatrization and partly to spasm. As this part of the duodenum is normally very symmetrical, with smooth, rounded borders, any irregularity in contour is easily detected. In addition, the emptying time of the stomach is usually much delayed, in almost all cases there being a sizable 6-hour residue in the stomach.

Differential X-ray Diagnosis: The most important differentiation is between gastric ulcer and gastric cancer. From the x-ray appearance of the deformity, cancer of the stomach may be divided into three types:

1. Medullary, where a large tumor projects into the lumen of the stomach. This appearance is entirely different from ulcer, and is not mistaken for it.

2. Indurative, where a large section of the gastric wall is infiltrated with cancer without any large projecting tumor masses and possibly with ulceration of the mucosa. The appearance here is identical with the chronic indurative type of ulcer already described and probably cannot be differentiated from it by x-ray examination alone.

3. Annular carcinoma of pylorus. Here the growth surrounds the pylorus and grows into the pyloric antrum, the effect being to narrow and lengthen the pyloric canal. There is, of course, a marked obstruction, just as there is in ulcer in this location. If the obstruction is not so violent as to prevent it, one can see the long tortuous pyloric canal, which is characteristic of annular carcinoma. If the obstruction is very violent, the pyloric canal will not be seen and this condition may be impossible to differentiate from obstructive ulcer, pyloric or duodenal.

Ulcer of the pyloric end of the stomach may be simulated by a reflex spasm of the musculature producing a similar deformity. The spasm is usually secondary to chronic appendicitis or gall-bladder disease. It usually disappears if belladonna is administered to full physiological effect. In reflex spasm the six-hour residue is generally not so large, or there may be no retention, and it is not common to get the dilatation of the stomach one sees in ulcer. The positive signs of gall-bladder disease or appendicitis should be looked for, of course. Adhesions to the duodenum or pyloric antrum from gall-bladder disease produce a deformity in contour often mistaken for ulcer and which is extremely hard to differentiate.

THE PATHOLOGY AND PATHOGENESIS OF PEPTIC ULCER

DR. W. W. MACHLACHLAN

The etiology of gastric or duodenal ulcer is obscure, but there are probably many causes. In trying to diagnosis these conditions, there is at present a tendency to underestimate the symptoms and perhaps to place too much reliance upon the laboratory tests alone. Ulcers may be single or multiple, acute or chronic, the most common site in the stomach being near the pylorus, and in the duodenum about 3 cm. from the pylorus.

The acute ulcers are usually punched out, funnel-shaped, with clean base, and may be of any depth. They are usually quite free from inflammatory cells and in their course may go on to perforation and even cause fatal hemorrhage if a large vessel has been eroded.

The chronic ulcers are of various sizes and shapes; chronic inflammatory cells are present, with more or less fibrosis. There are perigastric adhesions to the near-by organs. Exposed and eroded vessels result in chronic bleeding with sometimes acute exacerbation. When healing takes place, there are such deformities as an hour-glass stomach, stenosis at either the cardia or pylorus, and possibly obstruction to the flow of bile because of associated stenosis of the common bile duct.

The pathogenesis of these ulcers is more or less speculative. There may be a local injury to the cells, resulting in malnutrition and digestion of the part by the gastric juice. It is thought by some that the presence of hydrochloric acid is essential in the production of an ulcer. Chemicals and direct blows have resulted in ulcers. Then there are trophic changes such as following burns, stasis and ateritis of the capillaries, and finally the ulcers of tuberculosis or syphilis.

Diagnosis is made from the symptoms, signs, and laboratory data. There are no pathognomonic symptoms, but there are some that are suggestive. Pain is apt to appear two or three hours after ingestion of food. It is relieved by the taking of more food or alkalies. Pain may be present for weeks, months, or even years. Vomiting is sometimes present; it often relieves the pain, and sometimes the vomitus contains blood. Fifty per cent of the cases show a high total and free acidity, forty per cent show practically a normal amount of acid, while ten per cent show relatively low acidity.

A retention meal consisting of lettuce and raisins is sometimes helpful, as retention sometimes points to an associated spasm of the pylorus. Stools should be carefully examined for the presence of occult blood.

In the physical examination, patient is apt to be quite anemic, and there may be local epigastric tenderness. Of the laboratory data, the x-ray is by all odds the most helpful.

SURGICAL TREATMENT OF PEPTIC ULCER

DR. E. W. MEREDITH

As conditions are now, certain ulcers of the stomach and duodenum require surgical treatment.

Perforated Ulcer: Ulcers perforating into the free peritoneal cavity demand an emergency operation. In the subacute and chronic types radical measures may for a time be postponed. Later surgical relief is frequently sought on account of continuous pain and distress, gastric retention, vomiting and loss of weight through limitation of diet.

In free perforations, closure of the perforation is usually sufficient. Whether a gastro-enterostomy shall be done at this time depends on condition of patient and the condition of tissues about the site of perforation. It seems fair to assume that no patient's life was ever saved by this additional operation. In some cases the condition of the patient will be so excellent, the closure of the ulcer so difficult and inadequate, the local condition of the tissues so indicative of chronicity, induration and obstruction that no hesitancy will occur as to the proper procedure. In case of doubt, however, gastro-enterostomy should not be done.

Bleeding Ulcers: Operation is seldom indicated in bleeding originating in the upper abdominal gastro-intestinal tract. The difficulty of ascertaining the exact origin or cause of the hemorrhage (stomach, liver or spleen), the alarming condition of the patient, the tendency of the hemorrhage to cease spontaneously and the technical difficulties of controlling it once the abdomen is open, makes the "let alone" policy much the safer in most cases. Where repeated hemorrhages occur, however, the source of which is an ulcer, operation should be considered. Acute ulcers are more apt to bleed than chronic ones, and medical treatment may result in complete cure. The bleeding in chronic ulcers due to erosion of a large vessel is often fatal, the induration of tissues preventing spontaneous control. In such cases operation would seem to be indicated. The decision is a hard one to make, however, and temptation to delay great, as the chances of a successful operative outcome are small.

Chronic Callous Ulcer: A certain number of acute ulcers will develop into chronic ulcers—some through neglect, self-medication, inadequate treatment, and dietetic errors; others despite the most careful treatment and attention. This type of ulcer is particularly amenable to surgical treatment and the results are satisfactory in 80% of cases. It is true that some patients are not rendered symptom free; however, the improvement in these cases is so marked that they consider themselves cured. There are, and probably always will be some failures. Faulty diagnosis, uncorrected disease elsewhere in the body and technical errors will account for most of them.

Marginal ulcers at site of anastomosis occur in 1% to 2% of cases. Some of those ulcers are believed to be due to an "ulcer tendency" in the patient, meaning, probably, that the fundamental factors are still active.

The crux of the whole matter is the proper selection of patients. If the patient needs operative relief badly enough, the result is almost certain to be good. In determining this need, emptying time of the stomach will be the most important guide. This interference with the function of the stomach may occur irrespective of location of ulcer. Patients who fail to get relief from medical treatment are likely to be benefited by operation. Patients who promptly relapse, once active bed treatment is discontinued also should be given the benefit of surgical treatment.

As to the type of operation which may be required in a given patient, no exact rules can be laid down. Most patients that need an operation will require a gastro-enterostomy, as obstructive retention is a fundamental indication. Destruction or removal of the ulcer by knife or cautery is always desirable if conditions permit.

MEDICAL TREATMENT OF PEPTIC ULCER

DR. J. A. LICHTY

The medical treatment is largely symptomatic. The symptoms which determine the treatment are largely (1) the hunger pains which are so graphically described by nearly all of the patients (some patients will speak of it as an empty feeling, of a burning in the epigastrium, or of a gnawing sensation); (2) the symptoms which come with disturbed motility, eructation of gas, regurgitation of food, nausea, sometimes vomiting, a heaviness in the epigastrium.

The course of medical treatment should be determined by the degree of acuteness of the symptoms. Obstinate nausea and vomiting, especially with the presence of blood in the vomitus, or with blood in the stool, or a positive string test, indicate the necessity of most rigid care. The patient must rest in bed, preferably in a hospital, and have a trained nurse. Food should be withheld from the mouth and glucose feeding by the rectum done. The glucose solution should consist of 56 grams to the litre of normal salt solution and containing about 45 minims of deodorized tincture of opium. One and one-half litre may be given by the Murphy drip method in twenty-four hours. If the stomach is retentive, bismuth subcarbonate, or sodium bicarbonate or magnesium oxid or tincture of belladonna may be given in doses depending upon the degree of the acidity, the amount of pain and other conditions. At the end of five or seven days, if the symptoms have subsided, and if the string test should be negative to blood, food is also given by the mouth, beginning usually in the following order and amounts: Every two hours two ounces of either white of egg water, barley water, cream and vichy water or milk and lime water. These amounts are increased and the grades changed as conditions will permit, in about the following way: four ounces, six ounces, eight ounces. The intervals between the feedings are made three hours and rectal feedings continued. This may be after an interval of ten days or two weeks. The alkalies may be given midway between the feedings. To the food above specified is added, gruels, junket, custards, ice cream, raw eggs, soft boiled eggs, milk toast, cereals, toast and butter, mashed green vegetables, boiled potatoes. any whole vegetable, not sour, and finally, most any dietetic dish which can be made from milk, cream, butter, eggs, flour, and sugar; also stewed and raw fruits, not sour, are now allowed. The diet is brought up to the full caloric requirements and the patient is kept upon this for months, reporting at intervals for changes in diet. The stay in the hospital is from three to four weeks.

This is the treatment of an acute typical case. At any period in the course, the treatment may be modified. Rectal feeding may not be tolerated, which is not a great misfortune. The resting of the stomach goes on the same or food may be given by mouth sooner, or at once. The string may reveal a blood stain after five to seven days of treatment. The same treatment is continued for five days longer when, if the stain is still obtained, duodenal feeding through an Einhorn tube is instituted for ten to twenty days. Milk, cream, eggs, and sugar to the value of 2,500 calories per day may easily be introduced. Sometimes in the course of such a treatment conditions and complications are revealed which show that further medical treatment is useless. Surgical intervention is then instituted.

Common sense methods which will meet the indications, such as reducing the acidity, avoiding food stasis and food traumatism and furinishing sufficient calories, are all that are needed.

Certain complications which occur during the course of medical treatment should be mentioned. They will be very few if proper care is instituted. Constipation should be overcome with the diet or such alkaline laxative as magnesium oxid. Pain, if not relieved by the treatment already suggested, may be met by the administration of orthoform, or codein or morphin.

Treatment conducted on the lines suggested is most satisfactory, providing the coöperation of the patient can be obtained.

The medical treatment of peptic ulcer is established for the purpose of overcoming these symptoms and in the hope that the patient may be relieved or that the ulcer may heal. It is also concerned in establishing such a régime of living, including hygiene and dietetic regulation, as may tend to prevention of a recurrence of the ulcer.

Healthful living, removal of foci of infection, avoidance of acute systemic infections, all tend towards increasing of body resistance in this, as well as in other pathological processes.

This constitutes the general treatment of peptic ulcer which must be instituted in any treatment, be it medical or surgical.

REMOVAL OF VESICAL FOREIGN BODIES; TWO NEW METHODS

DR. C. H. AUFHAMMER

Many operative cystoscopic instruments have been manufactured. Most of them are of little value. Oftentimes one is confronted unexpectedly with the need of some simple aid at a moment when no operative instruments are available. For such cases we have evolved two methods which have upon occasions been of considerable help.

One occasionally finds in the bladder a rather large-sized stone which has been passed from the ureter, producing considerable bladder disturbance, and which, because of its size, cannot be voided. Upon cystoscopic examination it is found to be too large to be washed out through the ordinary cystoscope and perhaps not large enough to require crushing. Such a stone may readily be removed if one will place the distal

lens of the cystoscope directly over the stone, make sufficient pressure to hold it between the lens and the base of the bladder, withdraw the telescopic and catheterizing element about one-half inch, continue to press downward upon the stone, and then slide forward the telescope. The stone is caught in the opening of the cystoscope and held in place by the end of the telescopic obturator. Sufficient pressure is made on the eye-piece and the sheath to hold the stone firmly enough to permit its withdrawal through the urethra with the cystoscope. There is some urethral abrasion, of course, but the prompt relief of the stone's removal more than compensates for the slight trauma.

For other foreign bodies, such as rubber catheters in the bladder, etc., one may easily make a snare out of about fourteen inches of an old number 6-F uretral catheter, passing through it a doubled, fine snare wire, such as is used in nose and throat work, three or four inches longer than the catheter. This shortened catheter, with its wire loop extending to the end of the catheter, is passed through the catheterizing channel of the cystoscope in the usual manner and held in proximity to the foreign body. Both ends of the wire loop are pushed forward until the flattened loop *itself* extends about one inch beyond the catheter. One of the proximal ends of this wire is then pulled upon in order to produce an irregular shape to the loop, and this loop is placed over the end of the foreign body. Both wire ends are then pulled upon, tightening the loop over the foreign body and holding it to the catheter end. The cystoscope, catheter, wire and foreign body are all withdrawn together.

FREDERICK B. UTLEY, M.D., Secretary.

COMMUNICATIONS

To the Readers of THE ATLANTIC MEDICAL JOURNAL, *Harrisburg, Pa.*

AN APPEAL FOR INFORMATION ON MATERNAL WELFARE

The Committee on Maternal Welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is anxious to procure accurate information as to the progress which each state is making in the matter of maternal welfare in order to formulate a report for our annual meeting in Philadelphia, in September.

A preliminary programme was published in the issue of the *American Journal of Obstetrics and Gynecology* for June, 1923, which it is hoped may be a suggestion of an outline for national work among all organizations which have a common basic line of endeavor including Medical Societies, Departments of Health, and Commissions of Social Workers,

We shall be under many obligations if you will be kind enough to send at your early convenience a brief synopsis of the results accomplished in your state and, most important, if possible a contrast of the record of the clinics or regions where patients have been privileged to have prenatal care with the statistics of the community in general where no supervision has been afforded the prospective mothers.

These it is planned to have incorporated into the completed survey to be presented to the Association and to be published in the Annual Transactions later on.

DR. HENRY SCHWARZ,
St. Louis;
DR. GEORGE W. KOSMAK,
New York City;
DR. GEORGE CLARK MOSHER,
Chairman, Kansas City.

ETNA, PA., July 14, 1923.

To the Editor of THE ATLANTIC MEDICAL JOURNAL, *Harrisburg, Pa.*

DEAR SIR: The knowledge that the proposed change in the Compensation Act has failed is not encouraging. However, since we must submit to its many objectionable features for at least two years more, it certainly behooves the medical profession of this state to plan our attack at once, for a change in the law. Next time we must not fail. Too much credit cannot be given the Legislative Committee of the State Society for their untiring efforts in behalf of our interests. It is humiliating to know that the insurance interests were too strong for us and that their success will continue to fatten their pocketbooks during the next two years.

I believe we should lose no time in forming committees on compensation laws in our county societies, as suggested by Dr. Moses Behrend. The splendid activities of the Philadelphia County Society should serve as a shining example to us all and stimulate us to leave no stone unturned when the next legislature convenes.

As a start I have a suggestion to offer. Perhaps, since it involves the expense of a little time, it will not appeal to many. During the past year, I have sent my bill to the employer with a letter in which I have briefly brought to his attention the fact that I have rendered professional services to one of his employees and payment for same has been refused by the insurance carrier. I have also mentioned that a few carriers still feel a moral obligation to pay an honest debt and have done so, despite the fact that they might have sought refuge behind the notorious Mackay decision. The result of such a course has been payment of my bill by the employer and not by the carrier in a number of cases. I am convinced that the average employer is unaware of the injustices done to the surgeon by the present compensation law. I feel that by writing such a letter our side of this problem will be brought forcibly to the attention of those who can help us—the employers. Personal conversation with several of the latter has convinced me that such is the case. The business man is unaccustomed to getting things done for nothing. He expects to pay for his employees' injuries. Furthermore, I believe he is under the impression that he is paying his doctor bills. If every surgeon, who treats a compensation case in a hospital and fails to collect for his services, would take the trouble to notify the employer of the facts and repeat the procedure in every case, would not the sympathy of the employer be with us in a short time? Yours truly,

M. A. SLOCUM.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: We present herewith the names of the committees and their chairmen elected by the Allegheny County Medical Society to serve for the 1923 Session:

Transportation Committee—Dr. John A. Hawkins, Chairman.

Editorial and Publicity Committee—Dr. Edward B. Heckel, Chairman.

Hotel Committee, for the reservation of rooms, rates, etc.—Dr. I. H. Alexander, Chairman.

Entertainment Committee for Tuesday evening—Dr. H. G. Schleiter, Chairman.

Clinics—Dr. E. E. Mayer, Chairman.

Exhibits—Scientific and Pathological—Dr. Samuel R. Haythorn, Chairman.

Ladies' Committee—Mrs. Chas. Aufhammer, Chairman.

Thursday Evening Entertainment — Dr. James D. Heard, Chairman.

Members desiring hotel reservations should either write direct to the hotel stating that they are making reservation for the Session, or to Dr. I. H. Alexander, Chairman of the Hotel Committee, who will assign reservations. Reservations should be made early in order to secure desirable rooms.

Very truly yours,

Harold A. Miller, Chairman,
Committee on Arrangements.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Committee on Scientific Work

Essayists taking part in the annual session are requested to make careful note of the following:

1. Papers read before the Society become the property of the Society. (See chapter xi, Section 2, of the By-Laws of the Society.)

2. Papers and illustrations, if any, must be handed to the Secretary of the Section immediately after reading. No exceptions will be made to this rule.

3. Carbon copies are not acceptable; please turn in only originals.

4. Double space all papers and leave plenty of margin, especially on first page.

5. Lantern demonstrations must be arranged for by September 15th; otherwise lanterns will not be obtainable.

T. G. Simonton, *Chairman.*

RESOLUTIONS

ADOPTED BY THE MEDICAL BOARD OF THE PHILADELPHIA GENERAL HOSPITAL, AT A MEETING HELD ON JULY 12TH, RELATIVE TO THE DEATH OF DR. C. LINCOLN FURBUSH, DIRECTOR OF THE DEPARTMENT OF PUBLIC HEALTH, PHILADELPHIA, WHICH OCCURRED ON TUESDAY, JUNE 26, 1923.

The Medical Staff of the Philadelphia General Hospital desire to place upon record their sincere regret at the recent death of the Director of Public Health, Dr. C. Lincoln Furbush.

His position as Director made him responsible for the solution of many difficult problems. The sanitation of a large city, increasing in area and population, whose expenditures are limited; the successful administration of public institutions, having large staffs and dealing with a complex population; the best interests of the medical profession in furthering medical education and maintaining medical standards, and the stimulation and encouragement of public officials honorably to discharge duty to the public—these were among his many problems.

He brought to their solution ample experience, obtained in other countries, and under conditions of peace and war. To these he added a thorough knowledge of the matters in hand. The most valuable of all was his conception of a public duty and office as a public trust, and his faithful and conscientious fulfillment of this obligation.

In this last he was unsparing to himself. Health and even life itself were secondary in his valuation in comparison with duty performed and good results accomplished. He was prodigal in the expenditure of strength for others, and his life has ended before the span of its natural term was accomplished.

To this hospital he added much of great and permanent value. His intelligent and kindly sympathy with the desire of the staff for improvement; his generous support of all that was for the good of the institution, and the example of his personal loyalty, are appreciated more than ever since his loss.

The history of this hospital is rich in interest in the achievement of medical science, and contains many examples of personal attainment and devotion. But there can be no more valued addition to its history, and no more significant and appealing example than the life and character of him whom we have recently lost.

Committee:

Edward P. Davis, M.D., Chairman;
J. T. Rugh, M.D.,
John H. Musser, M.D.,
T. H. Weisenburg.

NEW AND NONOFFICIAL REMEDIES

Hayfever Timothy Pollen Extract—Mulford.—The liquid is obtained by extracting the proteins from the pollen of timothy. For a discussion of actions, uses and dosage, see the article on Pollen and Epidermal Extracts Preparations and Biologically Reactive Food Proteins, *New and Nonofficial Remedies,* 1922, p. 232. This preparation is marketed in packages containing fifteen consecutive doses for a complete treatment and also in packages containing partial treatments only. H. K. Mulford Co., Philadelphia.

Purified Diphtheria Antitoxin (Antidiphtheric Globulin).—Concentrated diphtheria antitoxin (*New and Nonofficial Remedies,* 1922, p. 280) is marketed in syringe containers of 1,000 units and in syringe containers of, respectively, 3,000, 5,000, 10,000 and 20,000 units. E. R. Squibb & Sons, New York.

Normal Horse Serum.—This product (*New and Nonofficial Remedies,* 1922, p. 278) is also marketed in packages of one 10 Cc. syringe. E. R. Squibb & Sons, New York. (*Jour. A. M. A.,* Oct. 21, 1922, p. 1427.)

Aluminum Compounds.—Several aluminum compounds are official, including the ordinary alum. The acetate and acetotartrate of aluminum are used in the form of solutions described in the National Formulary. Aluminum compounds are used for their astringent action. They are not so astringent as the lead salts, but they may exert an irritant and even caustic action when used in the form of concentrated solutions or as "burnt" alum. Aluminum compounds are slightly anti-

septic. Proprietary preparations of aluminum in combination with organic acids have been introduced with a view of utilizing the astringent and antiseptic properties of their components.

ALUMNOL.—The aluminum salt of betanaphtholdisulphonic acid. Alumnol is used as a mild antiseptic and, in concentrated solutions, as an irritant or caustic. It is used for the destruction of the gonococcus in gonorrhea. H. A. Metz Laboratories, Inc., New York.

NOVOCAIN BASE. — Para-amino-benzoxydiethylaminoethane. The base contained in procain. The action and uses of novocain base are the same as those of procain (*New and Nonofficial Remedies,* 1922, p. 36), but it is soluble in fixed oils. H. A. Metz Laboratories, Inc., New York.

NOVOCAIN NITRATE.—A brand of procaine nitrate—N. N. R. (*New and Nonofficial Remedies,* 1922, p. 37.) It has the actions and uses of procaine, but is compatible with silver salts. H. A. Metz Laboratories, Inc., New York.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (0.1L+).—A diphtheria toxin-antitoxin mixture (*New and Nonofficial Remedies,* 1922, p. 282) containing 0.1 lethal dose of diphtheria toxin neutralized with the required amount of diphtheria antitoxin. Marketed in packages of three vials, each containing 1 Cc.; also in packages of thirty vials, each containing 1 Cc. Lederle Antitoxin Laboratories, New York.

ACNE VACCINE.—Acne bacillus vaccine (*New and Nonofficial Remedies,* 1922, p. 298) is marketed in packages of four syringes containing respectively, 50, 100, 250 and 500 million killed bacilli; in packages of four ampules containing respectively, 50, 100, 250 and 500 million killed bacilli (with a syringe); in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed bacilli. E. R. Squibb & Sons, New York.

GONOCOCCUS VACCINE.—This product (*New and Nonofficial Remedies,* 1922, p. 301) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed gonococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed gonococci (with a syringe); in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed gonococci. E. R. Squibb & Sons, New York.

MENINGOCOCCUS VACCINE, CURATIVE.—Meningococcus vaccine (*New and Nonofficial Remedies,* 1922, p. 302) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed meningococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed meningococci (with a syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed meningococci. E. R. Squibb & Sons, New York.

PERTUSSIS VACCINE, CURATIVE.—Pertussis bacillus vaccine (*New and Nonofficial Remedies,* 1922, p. 303) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed bacilli; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed bacilli (with syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 2,000 million killed bacilli. E. R. Squibb & Sons, New York.

PERTUSSIS VACCINE, IMMUNIZING.—Pertussis bacillus vaccine (see *New and Nonofficial Remedies,* 1922, p. 303) is marketed in packages of three syringes containing respectively, 500, 1,000 and 1,000 million killed bacilli; in packages of three ampules containing respectively, 500, 1,000 and 1,000 million killed bacilli (with a syringe). E. R. Squibb & Sons, New York.

PNEUMOCOCCUS VACCINE.—This product (*New and Nonofficial Remedies,* 1922, p. 304) is a suspension of killed pneumococci Types I, II, III and Group IV in equal proportions. Marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed pneumococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed pneumococci (with syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 5,000 million killed pneumococci. E. R. Squibb & Sons, New York. (*Jour. A. M. A.,* Oct. 28, 1922, p. 1519.)

NEUTRAL ACRIFLAVINE.—It has the actions and uses of acriflavine (see *New and Nonofficial Remedies,* 1923). Being neutral in reaction, it is claimed not to have the smarting and irritating effect of acriflavine solutions. Neutral Acriflavine is a brownish-red, odorless, granular powder. It is soluble in less than 2 parts of water, forming a brownish-red solution which fluoresces on dilution and which has a bitter taste. The Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.,* May 19, 1923, p. 1455.)

INSULIN.—An aqueous solution of an active principle from pancreas which effects sugar combustion. The strength of insulin is expressed in "units," one unit being one-third of the amount required to lower the blood sugar below 0.045 per cent and cause convulsions in a rabbit weighing 2 kg. which has been previously starved for twenty-four hours. The administration of insulin to diabetic dogs and to man in severe cases of diabetes mellitus restores to the body the lost ability to oxidize corbohydrate, and glycogen is again stored in the liver. If insulin is administered at suitable intervals to a person suffering from diabetes mellitus, the blood sugar is maintained at a normal level and the urine remains free of sugar. Fat is also burned and, as a result, ketone bodies do not appear in the urine and diabetic acidosis and coma are prevented. The administration of insulin is indicated in cases of diabetes mellitus which cannot be controlled satisfactorily by dietetic treatment. Overdosage of insulin is followed by the development of serious symptoms which demand immediate treatment. Insulin is administered subcutaneously one, two or three times a day before meals. The dosage required to reduce the blood sugar to the normal level must be established for each patient by determination of the blood sugar before and after administration of insulin. In cases of coma or severe acidosis, an initial dose of 15 or 20 units of insulin may be given, followed at 3- to 4-hour intervals by smaller doses with simultaneous administration of glucose.

INSULIN—TORONTO.—A brand of insulin. It is marketed in 5 Cc. vials containing 10 units in each Cc., and in 5 Cc. vials containing 20 units in each Cc. Connaught Antitoxin Laboratories of the University of Toronto, Toronto, Ontario, Canada.

BARBITAL—M. C. W.—A brand of barbital—N. N. R. (See *New and Nonofficial Remedies,* 1923, p. 62.) Mallinckrodt Chemical Works, St. Louis, Mo.

QUININE ETHYL CARBONATE—M. C. W.—A brand of Quinine Ethyl Carbonate—N. N. R. Mallinckrodt Chemical Works, St. Louis, Mo. (*Jour. A. M. A.,* June 2, 1923, p. 1617.)

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August, 1923

EDITORIALS

THE PITTSBURGH PROGRAM

The preliminary program of the State Society for the Pittsburgh Session, October 1 to 4, 1923, is printed in this issue of the JOURNAL, and it is the wish of the Committee on Scientific Work that every member of the Society read it over carefully. You cannot help but be impressed with the fact that the Committee has undertaken an intensive study of anuria and of surgery of the kidney and ureter for your edification and benefit at this session.

In what way can you help to make these meetings a success? Statistics show that in cases of anuria treated expectantly the mortality is 72%, while following operation the mortality is 46%. Are not these figures appalling? Has not the mortality in diphtheria been reduced from 75% to 11% with the antitoxin treatment? Yet, we physicians, surgeons and specialists have been unable, up to the present time, to reduce the mortality in anuria below 46%! Is it not time that this subject should receive intensive study? Come to the meetings prepared to report briefly in the general discussions any cases of anuria you may have had during your professional career and any autopsy findings that will throw light on the subject.

Even surgeons and others of wide professional experience encounter so few cases of anuria during their lifetime—unless they are genito-urinary specialists—that the great majority of medical men and surgeons are left floundering around in a sea of bewilderment at a time when drastic measures must be taken and a definite line of action determined upon if we are to reduce the high mortality rate.

If our members individually should have had a dozen or more cases of anuria during their professional careers, we may rest assured that the Society would have heard from them in the section meetings long ago; but since the reverse is the case, the ones they have had they refuse to report on account of their mortality rate. Come out in the open and report them, for be assured your associates have had similar experiences. Let us get together at the Pittsburgh meeting and see if we cannot come to some agreement on the vital questions of how long it is safe to wait before the surgeon is called in consultation; how long it is safe to wait before adopting surgical measures; what surgical methods are best suited to the case in hand; and finally, what is the physiology and pathology present in these cases that causes complete anuria.

The essayists have all promised to answer these questions for you to the best of their ability. The President, the Vice-Presidents, the Trustees, the members of the House of Delegates and the individual members of the Society cannot afford to miss these papers. The experience of many, when collected, should materially aid in reducing the mortality rate in anuria. Apply the acid test between now and the meeting in October by asking all your associates the questions that have been asked you in the lines above and by trying to answer them yourself. When you have done this you can well understand the motives that prompted the Committee to arrange for a study of this subject at our coming meeting.

T. G. SIMONTON, Chairman,
Committee on Scientific Work.

THE OCTOBER MEETING

At the coming meeting of the Medical Society of the State of Pennsylvania, October 1st to 4th, inclusive, we are to be the guests of the Alle-

gheny County Medical Society, and judging from the preparations they are making, we shall be well repaid for the time spent in attending the scientific meetings, and in addition will be provided with entertainment of a very unique character. The names of the members of the Committees have been published, and they will assist you in making arrangements for the trip or in securing accommodations.

URETERAL STRICTURE

Stricture of the ureter, due to intrinsic inflammatory changes in the ureteral wall, is a disease much more common and of vastly greater clinical significance than it is generally supposed to be by many in the profession to-day. This is to be accounted for by the fact that the textbooks have had little to say about the condition and it has been very lightly touched upon in the medical schools. Apparently it is still regarded as a curiosity and classed with the congenital stricture. On the contrary, it is of very great importance to all who practice medicine or surgery to understand the symptomatology of this rather common disease.

Many patients have been relieved of appendices, tubes and ovaries, or subjected to exploratory operations, on account of symptoms due to ureteral stricture. In this event the patient continues to complain of the same pain as before and the doctor wonders why the operation for chronic appendicitis is so frequently unsuccessful, while the subject decides to try a chiropractor.

In 1902 Kelly anticipated the present-day investigation by assigning as etiological factors of ureteral stricture, the common pyogenic cocci, the gonococcus and the tubercle bacillus. Kelly and Burnam, speaking of traumatic stricture, state that which is the experience of many others working in this field, that "traumatic stricture of the vesicle end of the ureter, following injuries of labor and operations, especially the Wertheim operation for cancer of the cervix, is quite common. As a rule the trauma has so interfered with the blood supply of the organ that there is a lateral necrosis, a continuous leakage of the urine and ureterovaginal fistula. The spontaneous healing of such a fistula, almost invariably means stricture."

Hunner, who has perhaps studied more cases of ureteral stricture than any one, while corroborating the above statement as to the chief cause of traumatic stricture, believes the main etiological factors in the nontraumatic cases are the common pyogenic cocci, the staphylococcus, streptococcus and colon bacillus, and that they are carried by the blood stream to the wall of the ureter from a focal infection in a distant part of the body. According to his theory, infected teeth, tonsils, sinuses, gall-bladder or intestinal tract, constitute the more usual foci.

The pyelitis, so frequently associated with ureteral stricture, may be a secondary infection from the ureteral focus, or the pelvic infection may have been coincidental with that of the ureter.

Tuberculosis accounts for a certain proportion of strictures. In this condition there is usually an associated renal tuberculosis.

It is possible that infected uterine cervical glands, especially those which occur in the broad ligament region, may occasionally be responsible for stricture of the ureter.

As to the symptomatology of ureteral stricture, pain is the most frequent complaint. There is nothing characteristic about the pain; it may be anything from a vague discomfort in the kidney or pelvic region, to a sharp lancinating pain. A large proportion of these patients complain of a discomfort or pain at the site of the lesion. While the lesion may be high, it is most frequently found in the lower third, with pain in one or other of the lower quadrants. Pain in the lumbar region is of frequent occurrence, due probably to the commonly associated pyelitis and hydronephrosis. Some patients give a history of the pain shifting from the lower abdominal region to that of the kidney. Radiation of the pain to the hip and thigh posteriorly is a history frequently obtained. Discomfort in the bladder and frequently of micturition, is occasionally complained of. Severe attacks of renal pain frequently occur in this condition.

Other symptoms which may be mentioned are those referable to the gastro-intestinal tract, and appear to be reflex in origin. Nausea and vomiting are common and sometimes very persistent. Gaseous distention of the abdomen and symptoms referable to the colon are not uncommonly met with. Fever and chills are frequently present, and a history of nervous disturbances can usually be elicited. These nervous symptoms may lead to the diagnosis of neurasthenia. It is rather a shameless way to get out of a difficult situation by saying that the patient is "hipped."

There may be all grades of inflammatory reaction, from only a mild annular infiltration of the ureteral wall to an extensive dense thickening, which may extend an inch or more along the ureter. Some cases present multiple strictures. The chronic inflammation gives rise to fibrous tissue formation. This may be confined to the ureteral wall or there may be an associated periureteritis. The most usual location of ureteral

stricture in the female is in the broad ligament region. Another common location is just below the point where the ureter crosses the brim of the true pelvis. Ureteral stricture may be unilateral or bilateral.

As in most medical and surgical conditions a carefully taken history is of great help in establishing a diagnosis. A history of pain in one or both lower quadrants, the hips, the thighs posteriorly, or the lumbar region, is suggestive. To the above may be added chills, fever, gastro-intestinal and nervous symptoms. The chronicity of the symptoms is an important point. A history of previous focal infection should not be neglected. A careful palpation of the abdomen with special reference to the lines of the ureters, palpation of the ureters when possible by rectum or vagina, urinalysis, cystoscopy, ureteral catheterization, and roentgenography, constitute the usual procedures upon which a diagnosis of ureteral stricture rests.

Cystoscopy and catheterization of the ureters, particularly in women, by means of the Kelly cystoscope, is a comparatively simple procedure. The urine from the pelvis is examined cystologically, and bacteriologically. An estimation of the size of the renal pelvis is made. If infected, a lavage of pelvis is done. The treatment of ureteral stricture is gradual dilatation. A convenient way of dilating the stricture is by means of wax bulbs, placed on the ureteral catheter. The bulbs may be of any desired size. It is commonly necessary to repeat the procedure, the intervals varying from two weeks to several months. Not infrequently a complete cessation of symptoms is obtained.

Let us not omit a thorough investigation of the urinary tract, in patients presenting indefinite abdominal symptoms, backache, or pain in hip or thigh. W. E. H.

SINGULTUS

In the treatment of a patient, the clinician or practitioner must always keep in mind the pathological condition or conditions and the physiological disturbance that may exist and the relationship of these phenomena. Nevertheless, in his daily rounds he is governed very much in determining the progress of the case by noting the symptoms and change in the physical signs. One of the symptoms frequently met—at times of no special significance, and at other times very disquieting—dreaded by the patient, as well as the attending physician, is hiccough. Singultus is a reflex irritation of a complex nature with afferent impulses to the respiratory center and efferent impulses carried through the phrenics to the diaphragm. The irritation is usually caused by an inflammatory process of the structures supplied by the phrenics and pneumogastrics. An interesting article on this subject appears in the *New York Medical Journal,* June 1, 1922, by Dr. H. Schultz de Brun. The author asserts that the various types may be grouped according to the causative factors. Seven distinct types are demonstrable, namely:

Simple: A type caused by a sudden exit from a warm atmosphere to a cold atmosphere; the sudden chilling of the feet and hands; the taking of a cold plunge or shower; the drinking of a cold potion or cold carbonated waters.

Inflammatory: This form comes on after the onset of such inflammatory diseases of the abdominal organs as gastritis, appendicitis, enterocolitis, suppurative hepatitis, period of discharge, pancreatitis, strangulated hernia, and in any condition causing a high temperature which produces a general congestion of the viscera. In relapsing fever, typhoid and cholera, singultus is a very trying symptom, as it persists night and day until the temperature has dropped. It is usually a fatal sign in septicemia and septicopyemia. It is rare in pyemia, according to Pepper. In phrenic neuritis from exposure to cold and wet, or multiple neuritis involving the origin of the phrenics, that is the third, fourth and fifth cervical nerves, an obstinate singultus may ensue. During the influenza epidemic persistent and obstinate hiccoughs were reported. It was found in the majority of these cases that there was a marked congestion of the upper respiratory tract as well as inflammation of the bronchi and that as soon as this inflammation had subsided, the attacks of singultus disappeared. It has also been seen in pericarditis, in which case it is a significant symptom, death usually ensuing. In meningitis and disease of the spinal cord and of the spine, there have appeared fatal attacks of hiccough. This, however, is a terminal symptom, coming on just before death. In acute appendicitis (perforative gangrenous) followed by collapse without reaction, or in general peritonitis, the onset of hiccough is a bad omen.

Irritative: This class is usually of a transitory nature, when it is brought about by simple acute indigestion or dilatation of the stomach. It is frequently seen after the ingestion of foods of high or low temperature or very spicy foods. In infants it is usually caused by swallowing air with a resulting dilatation. The condition is most common in the gastro-intestinal irritations, and it is especially severe in intestinal obstruction. In the early stages of coryza there is a tendency to swallow the secretions, and hiccough may ensue. This is especially true of young

children. The symptom is frequently present when the intestinal tract is infested by tenia. It is an alarming symptom in postoperative conditions, especially when there has been manipulation of the upper abdominal region, causing a reflex irritation of the phrenics and pheumogastrics through an existing inflammation of the viscera supplied by these nerves. Singultus may also be caused by pressure irritation. It has been demonstrated in apoplexy, brain tumors and epilepsy. In the first two, the symptom is usually an unfavorable sign. It also occurs in chest and abdominal tumors when there is pressure upon the phrenic nerve at the point of origin or along its course. In women with goiters, which become larger during the menstrual period, there have been seen attacks of hiccough with cough, aphonia and dyspnea, being caused by pressure on the recurrent laryngeal nerve and on the trachea. Esophageal tumors and irritations have been the cause of persistent hiccough. In empyema the symptom is caused by irritation.

Traumatic: Hiccough was a frequent symptom seen in the practice of war surgery.

Specific: In uremia in chronic nephritis, when the urates and urea begin to diminish rapidly in the urine, and uric acid and cholesterin rapidly begin to increase in the blood, an obstinate hiccough occurs which fluctuates with the increase or decrease of the chemical constituents. Its occurrence is of grave significance. Hiccough also occurs in malaria, gout, diabetes and acute rheumatic fever, the origin of which is quite obscure. De Brun thinks it is caused by a general congestion of organs supplied by the pneumogastrics and phrenics.

Neurotic: Hysterical singultus usually attacks a person who is mentally inferior. Singultus is also seen in cases of epilepsy.

Unknown Origin: The origin of hiccough coming on in bronchial asthma or in a terminal arteriosclerosis is unknown. In shock, hiccough is an occasional complication, especially when there has been an internal injury to abdominal or thoracic viscera.

Treatment: This is classified as physiomechanical or medicinal. The simple type requires no treatment in the majority of cases, but should it persist over five minutes, the following physiomechanical methods may be tried: (1) Tongue traction for two minutes; (2) holding the breath and counting; (3) the blowing of a wind instrument such as a bugle, flute, or cornet; (4) galvanism applied to the neck; (5) lowering of the head and rectal stretching; (6) a sudden shock by taking the patient unawares; (7) sipping of water, hot or cold or ice; (8) pressure on the neck over the fifth cervical; (9) tickle the throat (vomit) and tickle the nose (sneeze); (10) throw head back and put fingers in both ears and swallow water (vagidepressors); (11) gargle with a bitter solution; (12) drink lemon juice and salt; (13) have patient inhale amyl nitrite; (14) mustard plaster applied to the epigastrium; (16) stand on hands or head; (17) flexion of legs and thighs on abdomen; (18) compression of supra-orbital nerves; (19) compression of epigastrium with ice; (20) actual cautery to the abdomen; (21) stretch arms up vertically, open mouth wide and extend tongue; (22) pass stomach tube; (23) should these simple methods fail, give few whiffs of chloroform, which will usually stop any simple persistent hiccough.

In hiccough due to inflammatory processes, the disease should be treated above all, and hiccough attacked by the elimination of toxins through gastric lavage with bicarbonate of soda, soap suds enemas, purges, emetics, as apomorphin or ipecac. When temperature is high, antipyretics may be given. Depressants are also efficacious, if the patient's condition warrants their use. In peritonitis, pancreatitis, typhoid, strangulated hernias, ileus and hepatitis, opiates should be administered early. In cholera, morphin and chloroform inhalations relieve the symptoms. In phrenic and multiple neuritis, counter-irritation and large doses of salicylates should be used. In septicemia and septicopyemia, morphin and atropin give temporary relief. Spraying the nose and throat with a solution of cocain and adrenalin, together with hot applications to the epigastrium and small doses of atropin, have proved very successful.

In the treatment of irritative singultus, always remove the cause of it, if it is possible. If the singultus persists, the physiomechanical methods mentioned above may be tried, and if these are not successful, the following drugs may be used: opium in the form of camphorated tincture or any alkaline mixture, or atropin, alone or with morphin, pushed until physiological effects are seen. There are patients who have continuous attacks of hiccoughs following indigestion. The diet of these patients must be regulated, their bowels kept open freely and they must get a great deal of open-air exercise. These often need tonic treatment such as iron, quinine and strychnin. When children are in the habit of swallowing nasal secretions followed by hiccough, they should have regular nasal douches twice a day and tonsils and adenoids should be removed if they are hypertrophied.

In postoperative conditions, when there is obstinate singultus, it is a good practice to keep the

patient under opiates. Also the application of heat to the lower part of the chest and upper part of abdomen, together with flexion of the thigh and legs if the condition permits, is beneficial.

In brain tumor and apoplexy, medication is of little value. Some temporary relief is given by the inhalation of chloroform, and hot applications to the epigastrium. In epilepsy, amyl nitrite and tongue retraction are of benefit. Opiates are the medications of choice when hiccough occurs in specific diseases, as chronic nephritis, malaria, gout, diabetes and rheumamatism. The various organs involved must be assisted to perform their functions without extra strain.

In the neurotic and hysterical types, de Brun has never seen a failure in stopping a true hysterical hiccough with the inhalation of chloroform while the patient was held down. Singultus in bronchial asthma is relieved by the hypodermic use of adrenalin. Morphin is a valuable adjunct if necessary. In arteriosclerosis the iodids and bromids relieve the symptoms if pushed. We sometimes meet a case of singultus in the treatment of which we are often glad for one more remedy; de Brun has supplied that want. G. E. H.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

BAIT FOR SUCKERS

"One of a Chosen Few"

There lies on the writer's desk a neat, attractive appearing circular, describing a "financial project of INTERNATIONAL IMPORTANCE," and giving an imposing list of men interested in the project. Now, this particular project may be all right (the writer wouldn't want to wager his best hat that it is not) but one of their statements is of the type usually adopted by the swindler, and provides, thereby, the text for this editorial: *"You are one of a very select group chosen to participate in this undertaking."*

To be "one of a very select group" is one of the things that seems to appeal to the average human, and no one is quicker to take advantage of this appeal than the swindler. He is usually a past grand master in the art of advertising—which implies that he is a profound psychologist and knows how to put his finger on the weak spots in the character of his fellow man.

Again, to be associated with "a project of INTERNATIONAL IMPORTANCE" is certainly satisfying to a man's ego—that is, until he finds out that he is only the dupe of men sharper than himself. So long as "the profits derived therefrom give promise of a splendid return," to find himself the chosen associate of a company of men formerly connected with internationally known business, is the quintessence of flattery—only the circular does not state just what is the project in which he is to be associated. He has to return the inclosed card for further information.

As aforesaid, all this may be perfectly on the level, but the circular is so cleverly constructed that it bears all the earmarks of a fake concern. *Honest* men usually avoid such an appearance of evil, and if they do not, *they* should be avoided until they learn better.

A short time ago we read an article giving statistics (we regret that we cannot refer you to the exact authority) which showed that ministers are the most gullible class of men in the country and that doctors are second on the list of suckers. All of which is a tribute to the unworldliness and trust in human nature of these professional gentlemen, but all of which will not do in this materialistic age and generation. To let himself be played for a sucker is not fair to a man's own old age; it is not fair to the wife he may leave to face life alone; it is not fair to the children he is in duty bound to educate, and to whom he should leave at least some small protection for the inevitable rainy day. If it is true that physicians are such frequent victims of the unscrupulous, it is time they "cut their eye teeth." We would, therefore, recommend that you

SUSPECT ANY PROJECT

That promises more than the legal rate of interest.

That promises you special privileges because of your connection with it.

Into which someone tries to rush you without sufficient inquiry and consideration.

Without a history—that is too new, that has not proved itself.

That has inexperienced people behind it.

Offered by a firm that does not have a rating. Ratings can usually be obtained through your banker.

That has to adopt blatant advertising tactics to induce prospects to buy. Good investments never go begging.

Offering too great a discount, or selling too far below par.

Offering oil or mining stocks until they are proved.

Offering as a talking point the phenomenal returns from some other similar project.

Handled by brokers of any but established reputation.

Offered you by telegraph or over the telephone, particularly in the middle of the night.

Recommended by someone you do not know. The stranger may be just as honest as you are—but make him prove it.

That will not give you time and every facility for proper investigation.

The safest man to buy from is the man who lives in your home town. He cannot take the midnight train for parts unknown so easily as the transient agent. He usually owns real estate and has a family, so that he is apt to be more careful not to decrease his desirability as a neighbor. If he happens to be your banker, he is still more apt to be conservative—and in this case, to be conservative means to be safe.

Your banker will advise you as a matter of routine. He does not charge anything for the service, and while he is not infallible, he is at least honest. He is a specialist in bonds and stocks, just as the physician is a specialist in treatment of disease. If the banker were to attempt to treat his own illness, you would surely disapprove. Why, then, should you expect to depend on your own judgment in investments?

Unless you can afford to speculate (and few doctors can) be conservative in your investments. Don't listen to the siren song of any get-rich-quick artist. Consult your banker and you will not be apt to have cause to regret it.

GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

Special attention is called to the statement regarding graduate medical education included in the annual report of the Council on Medical Education and Hospitals to the House of Delegates.[1] The undergraduate curriculum can be best developed only when the fields of both premedical and graduate medical education are well worked out. The higher premedical requirements relieved the medical curriculum of the essential courses in physics, chemistry and biology, and provided the student with a better foundation for the more complex medical subjects. A well developed curriculum for graduate medical schools will provide a place for technical subjects now crowded in the undergraduate curriculum. Clinical teachers frequently consume much valuable time in the undergraduate school in discussing subjects which belong in the graduate school. This time would be spent far better in emphasizing the essential principles of the various clinical specialties, in which all general practitioners should have a thorough grounding. With the development of the graduate school, the medical curriculum could be so graded that all subjects would be taught in their logical sequence to the benefit of both undergraduate and graduate students. The former would obtain a better knowledge of general medicine which, in the graduate school, would enable him better to master the advanced courses. The principles governing graduate medical schools contained in the Council's report are of particular importance at this time, since the need of increased opportunities in graduate medical instruction has become so well recognized. Not only should these opportunities be enlarged, but also the character of the training provided should be greatly improved and certain evils which heretofore have developed in graduate teaching should be eliminated, particularly that of granting pretentious and ornate diplomas after ridiculously short or inadequate courses of instruction. The training in each of the various clinical specialties, particularly, should be materially strengthened, whether it be provided in a continuous course of two or more years, or whether provision be made for it in a series of short, graded courses. All short courses should be adequately safeguarded so that they may not become easy short-cuts into special fields for which a longer training is essential. The further development of graduate medical education will have several beneficial results: It will bring into practical use an abundance of clinical material in this country not now being utilized, and convert many large hospitals into active educational centers; there will be a stimulus for better work in the institutions where such medical instruction is given; it will enable more physicians to secure an improved knowledge and skill either for general practice or a chosen specialty, and, finally, this improved medical service will benefit not only the patients in the hospitals but also the public at large.—*Jour. A. M. A.,* July 14, 1923.

1. Graduate Medical Education, J. A. M. A., **80**: 1934 (June 30), 1923.

BREAST CARCINOMA TREATED SURGICALLY AND BY ROENTGEN RAY

The clinical and postmortem findings in two cases of breast carcinoma treated surgically and by roentgen ray are reported by Cassie B. Rose, Chicago (*Journal A. M. A.*, June 16, 1923). Both cases were treated surgically and by the roentgen ray, and in both a heavy shadow appeared on the chest roentgenograms after a considerable amount of exposure. In each case, the postmortem revealed pathologic conditions sufficient to account for the shadows on the roentgenograms of the chest.

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

JUDICIOUS EDUCATIONAL PROPAGANDA

The Illinois State Medical Society has an active committee on educating the public to the truth about healing practices. This committee, in a survey, interviewed approximately seven thousand individuals in all walks of life, asking two questions, namely, "What did you do the last time you were sick?" and "What led you to do that?" Only six per cent of the replies indicated lack of interest, past, present or future, in any of the healing cults. Of the remaining ninety-four per cent, seven per cent gave previous unsatisfactory personal experiences with doctors of medicine as their reason for consulting so-called cultists. The vast majority had confused impressions regarding the long years of study preparatory to entering the practice of medicine, and but slight conception of the part played by doctors of medicine in the world's scientific, economic and social progress.

As a result of this survey, the committee suggests, first, that the individual members of the society evince as much interest in the treatment of so-called minor ailments as they do in the more serious sicknesses; and second, that the State Society spend money judiciously in advertising. Banks and high-class investment houses found it necessary through advertisements to tell the public who was best equipped to give the public sound financial advice. The medical profession occupies much the same relation to the public and the cults and quacks that honest bankers occupy to the public and fake stock salesmen and promoters, and we must *give the public the truth regarding all schools of healing.*

OCTOBER 1-4, 1923

In this number of the JOURNAL will be found the preliminary program as prepared by the Committee on Scientific Work for the Seventy-Third Annual Session of our Society. The benefits that you as an individual member will receive from the presentation of this program will be largely in proportion to your own efforts to profit thereby.

All meetings, executive, general, scientific and social, will be held in the William Penn Hotel. Those of our members and their families who have attended similar meetings in Pittsburgh will no doubt remember with pleasure the social and sight-seeing entertainments provided by the Allegheny County Medical Society as well as the profitable hospital clinics conducted before and after the annual session.

Far-sighted members will obtain hotel reservations in advance and if travelling by rail remember to ask of their home-town ticket agent a certificate (not a receipt) entitling them to one fare and one-half for a round trip.

1923 MEMBERSHIP LIST

As per instructions of the Board of Trustees, the annual printed list of members, officers and committees of the sixty-three component county medical societies is this year to be distributed only to the officers of the State Society and its component societies. This list has for a number of years been embodied in the July number of the MEDICAL JOURNAL. For the benefit of those who are interested in totals we append a list of the component societies with their total membership as of July 1, 1922, and July 1, 1923. The grand total membership July 1, 1922, was 7,143. The grand total membership July 1, 1923, was 7,207. We trust that the officers of all county medical societies as well as Councilors and Trustees will study closely the figures herewith attached and bend every effort to add materially to the list of members where possible.

County	Membership July 1, 1922	Membership July 1, 1923
Adams	24	22
Allegheny	1,182	1,225
Armstrong	57	55
Beaver	62	61
Bedford	15	16
Berks	135	135
Blair	87	87
Bradford	49	47
Bucks	76	75
Butler	50	52
Cambria	130	135
Carbon	28	28
Center	26	26
Chester	75	71
Clarion	31	31
Clearfield	65	66
Clinton	23	24
Columbia	43	40
Crawford	52	49
Cumberland	38	33
Dauphin	153	157
Delaware	88	86
Elk	24	24
Erie	130	133
Fayette	114	115
Franklin	51	53
Greene	28	28
Huntingdon	36	35
Indiana	60	63
Jefferson	50	52
Juniata	11	12
Lackawanna	185	185
Lancaster	129	123
Lawrence	57	56
Lebanon	36	37
Lehigh	104	108
Luzerne	221	235
Lycoming	113	113
McKean	42	39
Mercer	74	77
Mifflin	25	25
Monroe	15	14
Montgomery	157	154
Montour	23	23
Northampton	134	137
Northumberland	60	59
Perry	15	14
Philadelphia	1,961	1,938
Schuylkill	112	124
Potter	14	15
Snyder	9	9
Somerset	44	46
Susquehanna	17	17
Sullivan	8	6
Tioga	29	28
Union	17	15
Venango	55	53
Warren	48	48
Washington	122	121
Wayne	25	25
Westmoreland	150	150
Wyoming	12	12
York	124	116

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to July 17th:

ALLEGHENY: *Removals*—William T. Hall from Pittsburgh to Box A, Bellefonte (Center Co.); Adam P. Fogelman from Munhall to Sheridan (Lebanon Co.). *Death*—John G. Burke (Univ. of Pittsburgh, '97), of Pittsburgh, June 25, aged 55.

ARMSTRONG: *New Member*—George J. Heid, Nu Mine.

BERKS: *Removal*—Isaac B. High from Philadelphia to 227 N. Sixth St., Reading.

BUCKS: *Removal*—William J. Wilkinson from Sellersville to 411 E. Main St., New Holland (Lancaster Co.).

CUMBERLAND: *Death*—Edward Y. Rich (Univ. of Penna., '01), of Mechanicsburg, May 6.

DAUPHIN: *Death*—Jacob W. Shope (Jeff. Med. Coll., '80), of Harrisburg, June 14, aged 78.

ERIE: *Death*—Friend L. Hall (West. Res., Univ., '82), of Erie, recently, aged 68.

INDIANA: *Death*—William L. Shields (Univ. of Louisville, '85), of Kent, recently, aged 62.

LANCASTER: *New Member*—Norman E. Snyder, Lancaster.

LEHIGH: *Transfer*—Lawrence H. Bloom, Phillipsburg, N. J., to New Jersey Medical Society.

LUZERNE: *New Member*—Henry M. Laing, Dallas. *Removal*—Edward I. Wolfe from Shickshinny to 1110 Wyoming Ave., Forty Fort.

LYCOMING: *Removals*—Leon J. Camche from Williamsport to 4721 Fourteenth Ave., Brooklyn, N. Y.; Waldo W. Hull from Williamsport to Burlington (Bradford Co.); Harry C. Fuller from Latrobe to Jersey Shore.

MONTOUR: *Removal*—Frank D. Glenn from State Hospital, Danville, to State Hospital, Torrance (Westmoreland Co.).

MIFFLIN: *Reinstated Member*—William McLean Baker, Lewistown.

PHILADELPHIA: *New Members*—Francis C. Grant, 3600 Walnut St.; Milton B. Emanuel, 625 Vine St.; Philip Weinstein, 535 W. Olney Ave.; Henry H. Perlman, 1904 N. Franklin St.; Benjamin B. Rittenberg, 5400 W. Arlington St.; Sidney Harberg, 1016 N. Sixth St., Philadelphia. *Reinstated Member*—Lewis C. Scheffey, Lansdowne.

SCHUYLKILL: *New Members*—William F. Leach, 319 E. Center St., Shenandoah; Harry C. Wallace, Pottsville.

WASHINGTON: *Removal*—Alden O. Davis from Charleroi to 108 Neville St., Pittsburgh (Alleg. Co.).

WESTMORELAND: *Removal*—William P. Nolan from Greensburg to 311 Clay Ave., Jeannette.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since June 18th. Figures in first column indicate county society numbers; second column, state society numbers.

June 20	Luzerne	231-232	7186-7187	$10.00
23	Cumberland	34	7188	5.00
25	Luzerne	233	7189	5.00
27	Mifflin	26	7190	5.00
	Beaver	64	7191	5.00
	Schuylkill	126-127	7192-7193	10.00
	Tioga	29	7194	5.00
28	Wayne	25	7195	5.00
29	Lancaster	117-125	7196-7204	45.00
	Lancaster	126-127	7205-7206	10.00
	Berks	137	7207	5.00
July 2	Lehigh	108-110	7208-7210	15.00
	Chester	73	7211	5.00
5	Tioga	30	7212	5.00
6	Armstrong	55	7213	5.00
9	Snyder	10	7214	5.00
10	Columbia	40	7215	5.00
11	Lawrence	51, 53, 56	7216-7218	15.00
	McKean	39	7219	5.00
13	York	117	7220	5.00
16	Luzerne	234	7221	5.00
Luzerne	(1922 dues)	234	7328	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

THE SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The Seventy-fourth Annual Session of the American Medical Association was held in San Francisco June 25-29 inclusive. San Francisco has at previous times been host to the medical profession of the United States, but never in the history of the city has it offered such splendid opportunities for entertainment as well as scientific endeavor as at the recent Session.

While Pennsylvania was not represented as largely at this session as was hoped, yet realizing the distance our men and women had to travel, there were a goodly number registered during the session. The official daily bulletin up to June 29th gave a registration of 73.

The House of Delegates passed upon many important subjects of legislation, and the several sessions of the House were interesting on account of the large attendance of its members. The committees reported promptly on all matters brought before them, and many advances were made in business which relates to the organization of the Association. The reports of the various officers contained much information of value to every doctor in the United States, all of which will be printed in the JOURNAL of the American Medical Association and should be read.

A committee was appointed to draft a memorial to the late Dr. Alexander R. Craig, former secretary of the Association and a member and former resident of Pennsylvania. This committee, of which Dr. Walter F. Donaldson was the chairman, drafted a memorial which was presented to the House and unanimously accepted.

The report of the Bureau of Legal Medicine and Legislation, which is of special interest to us and which is presided over by Dr. William C. Woodward, Executive Secretary, contains much of interest relative to the national prohibition act, the Harrison narcotic law, the Veterans' Bureau and irregular practice. There were also many other valuable reports which are too voluminous to present at this time. Everyone who is interested in the future of the practice of medicine should be conversant with the work of this department of the American Medical Association.

The reports of the Judicial Council and the Council on Health and Public Instruction also contained items of importance to the doctor. The subject of prohibition and its relation to the physician came up under the order of several amendments, which were met with such opposition as to cause all of them to be laid on the table. The relation of the physician to the public was discussed freely and no doubt will be a subject for discussion in the various states during the coming year.

The scientific sessions were well attended and the program was replete with papers of splendid scientific interest. The commercial and scientific exhibits were the best arranged that the Association has ever had, and this was made possible by virtue of the fact that the meetings were held in the Civic Auditorium, a building especially adapted for this type of convention. The social side of the session and the entertainment for the ladies was especially pleasing to those of us from the East because it offered an opportunity for us to see the way "the Californians do it." We wish to express to the members of the profession of California our extreme pleasure and gratification for the way in which they entertained the visiting doctors and their wives.

While Pennsylvania did not have its full quota of elected delegates, yet the delegation was filled by members who were in attendance at the session. These delegates organized and appeared in a body at each session of the House. The following is a list of officers and committees elected at the Session:

President—Dr. Ray Lyman Wilbur, President of Stanford University.

President-elect—Dr. W. A. Pusey, of Chicago.

Vice-President—Dr. W. E. Musgrave of San Francisco.

Secretary—Dr. Olin West of Chicago.

Treasurer — Dr. Austin A. Hayden of Chicago.

Speaker of the House of Delegates—Dr. F. C. Warnshuis, of Grand Rapids, Michigan.

Vice-Speaker—Dr. Rock Sleyster, of Wauwatosa, Wisconsin.

Trustees—Dr. J. J. Upham, of Chicago; Dr. Charles W. Richardson, of Washington, D. C., and Dr. Walter T. Williamson, of Portland, Oregon.

PITTSBURGH, OCTOBER 1 TO 4, 1923

Make preparations now for attending the next Annual Meeting of the Medical Society of the State of Pennsylvania, October 1st-4th. As an active, wide-awake, 100%-physician you cannot afford to miss the next annual session.

In addition to the regular scientific program under the leadership of the very efficient Chairman, Thomas G. Simonton, there will be a Symposium on Diabetes, Thursday evening, October 4, 1923.

I. Development of Insulin from Laboratory and Clinical Standpoint. (30 minutes.) Dr. F. C. Banting, Toronto, Canada.

II. Treatment of Severe Diabetes. (30 minutes.) Dr. John R. Williams, Rochester, N. Y.

III. The Rôle of Diet in Diabetes. (30 minutes.) Dr. C. H. Newburgh, Ann Arbor, Mich.

There will also be a Diabetes Clinic on Friday, October 5th.

I. Laboratory Aspects of Diabetes. (30 minutes.) Dr. F. C. Banting and Drs. zur Horst and Snowden.

II. Insulin in the Treatment of Diabetes. (20 minutes.) Dr. Thomas Ordwar, Albany, N. Y.

III. Insulin: Its Administration and Its Possible Dangers. (20 minutes.) Dr. John R. Williams, Rochester, N. Y.

IV. Diabetic Coma. (20 minutes.) Dr. Allen A. Jones, Buffalo, N. Y.

V. Diet and Diabetes. (20 minutes.) Dr. L. H. Newburgh, Ann Arbor, Mich.

VI. Surgery and Diabetes. (20 minutes.) Dr. John A. Lichty, Pittsburgh, Pa.

The local Committee is preparing a unique entertainment for Tuesday evening, October 2d, at which time all the great and near-great of the Society will have an opportunity to see themselves as others see them; it will be a burlesque of wholesome, innocent fun. It will be something you cannot afford to miss.

The women will be especially welcome to Pittsburgh at this time, as preparations are being made for automobile drives, shopping tours and fashion reviews.

On Wednesday evening, October 3d, will be the President's Reception and Ball, at which time everybody is expected to turn out.

If you have not made your hotel reservation, do so at once either by writing direct to the William Penn Hotel or to Dr. I. H. Alexander, Jenkins Arcade Building, Chairman of the Hotel Committee, who will be at your service and delighted to render you any assistance.

THE GOVERNMENT WOULD BUY BRAINS

At various times *The Journal* has called attention to the lack of judgment used in the United States Patent Office in the issuance of patents of a medical or quasi-medical character. The patent that was issued for the special tapeworm trap, that which was granted for "Perkins' Metallic Tractors," the one given to Quack Sanche for his fraudulent "Oxydonor," the one, called attention to a few months ago, on a preposterous combination as an alleged cure for consumption—these and many other cases could be cited showing the lack of brains in the Patent Office. One of the reasons for this lack becomes apparent. Within the last few days the United States Civil Service Commission has sent out a notice advising the public that on June 20th there will be held an open competitive examination for assistant examiner, Patent Office. The applicants for this position will be examined on the following subjects: physics, mechanical drawing, technics, mathematics and language, with an optional subject to be chosen from the list of chemical engineering, civil engineering, electrical engineering, electrochemistry, general chemistry and mechanical engineering. The applicant must know enough mathematics to be able to answer questions in algebra, plane and solid geometry, plane trigonometry, analytics and differential calculus. He must know enough about mechanical drawing so that when given photolithographic copies of drawings of pieces of machinery he can describe the views, the construction and the operation of the machine represented in such technical terms as would be used by a skilled draftsman in preparing an application for a patent. Further, he must have a knowledge of the grammar and idiomatic construction of both French and German. In technics he must show familiarity with the applied sciences in the field of mechanics, mechanic arts, industrial arts and processes and applied chemistry, and should have "a broad, general knowledge of these subjects." If he passes the examinations in these various subjects he will get the job of assistant examiner at the Patent Office, and be paid the magnificent salary of $1,500 a year (less than $29 a week), with a bonus of about $4.50 a week additional if his services are satisfactory. Is it any wonder that the Patent Office fails to attract the brains of the nation? Some things, however, it seems, the examiners in the Patent Office do not have to know. There is nothing to indicate that even an elementary knowledge of the medical or biologic sciences is necessary—which may explain the weird conception that the Patent Office exhibits of what constitutes "new and useful" inventions in the medical sciences.—*Jour. A. M. A.*, June 16, 1923.

THE PATIENT'S MIND

William House, Portland, Ore. (*Journal A. M. A.*, July 21, 1923), summarizes his paper as follows: The sick body is always accompanied by a sick mind. Many sick persons have no organic disorder, but suffer from the effects of suggestion either from within or from without. If suggestion produces disease, it can also cure disease. Recovery of both mind and body is retarded by fear, worry and misinterpretation of symptoms, and is hastened by their removal. Much of the success of the cultists is due to their ability to inspire hope. All that they do can be better done by trained physicians. There is nothing mysterious in scientific psychotherapy. Every physician consciously or unconsciously uses it in his practice. It consists in finding out what is going on in the patient's mind and relieving it by rational explanation and encouragement based on accurate diagnosis. Psychotherapy should supplement and not displace other recognized forms of treatment. Scientific minds will respond to scientific methods, but child minds can be reached only by methods suited to their limitations.

County Medical Societies

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

August, 1923

COUNTY SOCIETY REPORTS

CUMBERLAND—JULY

Cumberland County Medical Society met July 10th, at Hilltop Inn, Shepardstown, Pa. The features of the day were an excellent dinner and an interesting and very highly instructive lecture on "Obstetrics," by J. O. Arnold, M.D., Clinical Professor of Obstetrics, Temple University Medical School.

The paper by Dr. Arnold was thoroughly enjoyed by all those present as he dealt with his subject in a most practicable and thorough manner.

Parker U. Wagoner, M.D., Reporter.

LYCOMING—MAY

At a regular meeting of the Lycoming County Medical Society, held Friday afternoon, May 11, 1923, the following resolution was presented and unanimously adopted:

"*Resolved*, That the president of the Lycoming County Medical Society appoint a committee of three members to write a letter condemning the prohibition officers of Pennsylvania and the Federal officials at Washington for not furnishing the physicians with permits and prescription blanks upon which to write prescriptions for our patients, and demand fair treatment by them."

The Lycoming County Medical Society desires to put itself on record as emphatically condemning the present mode of administration of the Federal prohibition laws.

We believe that alcohol holds an important place in the list of the valuable drugs: frequently a desirable therapeutic agent, occasionally an essential one and an agent which may determine the life or death of the sufferer.

Such a drug should be readily available to the medical profession, or at least to those who desire to use it. It should be as available as other potent drugs, such as strychnin or morphin. Its use may properly be subjected to governmental supervision; but such supervision should not be of a character to be tantamount to prohibition. The social aspects of the liquor question presents a problem entirely foreign to the medical side.

Our interpretation of the existing legislation is that our lawmakers held opinions similar to the foregoing. We believe that it is the intent of the law to enable the sick to obtain, when necessary, a pure high-grade product of whiskey or alcohol when, in the judgment of the attending physician, such is necessary. It is as much a violation of the Volstead Act (in principle, if not in letter) for the bureaucratic administrators of this law to deprive the physicians of this right as for the "bootlegger" to peddle his vile stuff; both are moral criminals. And what epitaph is vile enough for the prohibition director, who by negligence in issuing the permits prescribed by law, drives the sick sufferer to the use of the inferior whiskey dispensed through illegitimate channels?

We believe that we are within our rights when we respectfully insist that such be corrected. We respectfully demand that the reputable practicing physician be given the rights and privileges to which he is entitled by law and custom; that in his necessary dealings with the prohibition officer, he shall be treated with courtesy, promptness and intelligence.

It has frequently happened where physicians in Lycoming County have been unnecessarily deprived of prescription blanks for periods varying from one week to four months, which we believe should and could be remedied by prompt and efficient attention on the part of those in charge of the prohibition office.

W. E. Delaney, M.D.,
Edward Lyon, M.D.
Fred C. Lechner, M.D.,
Committee.

PHILADELPHIA

June 13th

Dr. Orlando H. Petty: The Practical Use of Insulin in the Treatment of Diabetes.—Insulin is an

epoch-making discovery, and miraculous results have rightly been attributed to it. It does not cure diabetes, but helps in the treatment, which it makes more difficult rather than simplifying it. When properly used, it enables the emaciated, semicomatose patient to become properly nourished and to assume his proper position in the world. In using insulin, the patient is weighed and his height taken, and compared to a table of ideal build. The ideal weight for a certain height is found. The amount of work the patient is required to do is estimated and taken into consideration. In a mild case, if the patient cannot stand the ideal carbohydrate food, or if admitted with blood sugar of two hundred fifty and glycosuria, five to twenty units of insulin are administered, depending on the severity. This is estimated on the height of the blood sugar, and not on the amount of sugar excreted. In severe cases, larger doses are given, sometimes eighty to a hundred units a day, to bring the blood sugar to normal. It may be given every hour. Ten or fifteen grams are followed ten or fifteen minutes later by orange juice or other carbohydrate. Cases of profound coma, of gangrene, and of mastoiditis have been successfully treated. No physician can use insulin unless he has mastered the intricacies of diabetic diet, which is always a part of the treatment of diabetes.

Dr. Petty showed slides to illustrate the fall in blood sugar after the administration of insulin.

Discussion by Dr. Henry Bazett, head of the Department of Physiology, University of Pennsylvania: In speaking of measurements, a distinction should be made between accurate and approximate measurements, one method for research and another for clinical work, not necessarily the same. Insulin will stop the hyperglycemia of ether, adrenalin, fourth ventricle puncture, etc. There is a sort of balance between the endocrine glands, the pancreas antagonizing the action of the adrenals, thyroid, and pituitary. Insulin, however, has a definite function besides this antagonistic one. There must be different kinds of diabetes, and the results with insulin are not quite so good with non-pancreatic cases.

Dr. Leon Jonas: When the results of the various clinics using insulin have been published, a standard way of administration will be settled. In the University Hospital, in a case with glycosuria, one hundred grams fat and fifty grams carbohydrate are given. Then if not sugar free, five units of insulin are given once a day until the caloric intake is eight hundred to a thousand above the standard requirements. When a patient is discharged, he is taught how to examine his urine and how to combat the symptoms of hypoglycemia, if they should appear. The economic factor cannot be disregarded, since the cost of insulin is about fifty cents to a dollar a day.

General discussion: Care must be used in starting with a unit, as one unit has been known to reduce the blood sugar below normal.

The longer a patient has had diabetes, the more resistant he is, and the larger the dose of insulin that will be required. More accuracy is needed in treatment.

Dr. Jonas: All cases of coma should be sent into hospitals where insulin is used.

Dr. Petty: A new definition of diabetes is that it is a disease that is characterized by hyperglycemia or glycosuria or both that is completely controlled by insulin. There are not different types of diabetes. Insulin administered in proper doses, with a proper diet, at proper intervals, will control all cases of diabetes. There is not much practical danger of hypoglycemia. A trace of sugar in the urine is an indication of danger. Larger doses are necessary. In a case of actual or threatened coma, a blood sample is taken, twenty-five units of insulin injected into the vein, and twenty-five to fifty units added subcutaneously, the latter repeated according to the clinical manifestations.

Dr. Theodore Diller: "Medicine as a Career To-day."—Forty years ago Dr. Diller entered medical school with only a high school education, while now most schools are requiring a degree for entrance. It cost him thirteen hundred dollars to become a doctor, while his son spent fifteen hundred dollars for one year at Princeton, and a medical education to-day costs twelve to fifteen thousand dollars with a leeway. A doctor is not able to marry before thirty-five. After practicing for thirty years, he has no organization to leave, no economic assets, although if he is successful, he may leave a name. This is a low point of view, but doctors are pushed by the economic side, and cannot ignore it. However, it is a noble profession, although other professions are also noble. There is not a physician who does not do some charity work. Medical education is in danger of becoming too scientific. Students should have time to read something besides medicine. No one should attempt to work his way through a medical school, and all doctors should learn how to play as well as to work.

Dr. Moses Behrend: "The Workmen's Compensation Law."—The statement that more than one-half the profession pad their bills is challenged. Badly infected cases come from the large plants with full-time physicians, where there are many extraneous factors causing infection, and it is not a question of having had good care. An employee cannot employ his own physician without the consent of the employer and the insurance company. There ought to be no discrimination between industrial and accident cases, but the latter are always referred to the family physician. The law favors the insurance companies, exemplified by the fact that they declare large dividends, while they claim to be doing charity work. Pennsylvania is the only state with compensation laws where the physician is not paid for his services. A new bill is to be brought before the Legislature, but it cannot be passed this session. More physicians should be willing to serve in public office.

Discussion by Dr. L. E. Evens, Medical Adviser, Ætna Life Insurance Company: Five per cent of the accidents in industry are the result of inefficient, reckless employers, systems and plants, while the other ninety-five per cent are due to carelessness of the employees themselves. The employer should not have to pay for such carelessness. The employee is paid for risks in his salary. Compensation is for the women and children who are not to blame and who must suffer. Insurance companies are merely auditors, looking after the employer's interests. Since the compensation law of 1919, physicians get ninety-five per cent on all bills. From 1911 to 1919, insurance companies did not make a dollar. Should foreign workers be allowed to get their own physicians who treat infections with salves?

Dr. A. C. Wood: The law is clear. Physicians are to receive their fees, and are not paid when the hospital fees are paid. Insurance is not a losing proposition practically, as statistics show that insurance companies pay out forty per cent of what they receive. The law says that the cost shall not exceed the charge for other cases, but industrial cases are charged more than ward cases.

Dr. Charles M. Stiles: The hospital is entitled to send in bills. Medical and surgical service is given by the unpaid staff. The visiting physician or surgeon is not paid by the hospital, and travels a long distance, and the law rightly makes provision for such services. The hospital is paid for only thirty days, and the time should be lengthened.

General discussion: The law is ambiguous, and needs interpretation.

Dr. Behrend: The law is clear enough. We must look out for the new health insurance, or the same thing will happen. A. R. Winter, Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Charles A. Zeller, for the last twenty-five years a resident of Dalton, died suddenly at his home on July 23d, aged about 50 years.

Dr. Charles M. Rhodes, of Harrisburg, aged 51 years, died recently. He was a graduate of Hahnemann Medical College and Hospital of Philadelphia, class of 1900.

Dr. William Lorne MacDougall, of Scranton, who was graduated from the Medico-Chirurgical College of Philadelphia, 1910, died on June 23d, at the age of 66 years.

Mrs. Ellen Bigler MacBride, mother of Dr. M. Edith MacBride, of Sharon, died at Buhl Hospital, Sharon, on July 2d. Dr. MacBride is the secretary of Mercer County Medical Society.

Dr. Vladimir Kowal, of Philadelphia, who was on the staff of the Stetson Hospital, died on June 21st of nephrolithiasis, at the age of 31 years. He was a graduate of Jefferson Medical College of Philadelphia, class of 1920.

Dr. William L. Shields, of Kent, died on May 27th, aged 62 years. Dr. Shields was graduated from the University of Louisville (Ky.) Medical Department in 1885, and was a member of the school board for many years where he resided.

Dr. Edward Ambrose Sweeney, of Wilkes-Barre, died on June 21st, at Philadelphia, of myocarditis and nephritis. Dr. Sweeney was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1892, and at the time of his death was 57 years old.

Dr. Adolph William Miller, of Philadelphia, who was born in 1841 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1871, died on July 6th of senility. Dr. Miller was also a druggist, and was formerly demonstrator and lecturer on practical pharmacy at his alma mater.

Dr. Charles N. Brosius, of Shamokin Dam, veteran of the World War and for fifteen years a prominent Snyder County physician, died suddenly from heart failure, recently. He was born in 1878 and was graduated from the Medico-Chirurgical College of Philadelphia in 1907. During the war he served as a first lieutenant at Hoboken and in England. He is survived by his widow.

Dr. John Grant Burke, an active member of the Allegheny County Medical Society, died at his home in Mt. Washington, Pittsburgh, on June 25th. Dr. Burke was born in 1868 and was graduated from the University of Pittsburgh School of Medicine in 1897. He began active practice immediately and soon made a specialty of dermatology. He was a member of the staff of the South Side Hospital. Dr. Burke is survived by his wife and four children, the oldest of whom has just graduated in veterinary medicine. His mother, two brothers and a sister are living also.

BIRTHS

Dr. and Mrs. L. L. Porch, of Johnstown, announced the birth of a son recently.

Dr. and Mrs. Tobias C. Shookers, of Lancaster, announced the birth of a son recently.

Dr. and Mrs. Josiah F. Reed, of Harrisburg, announce the birth of a son, William Marcus Reed, on June 27th.

ENGAGEMENTS AND MARRIAGES

Dr. Frank L. Richards and Miss Julia Craig, of Huntingdon, were recently united in marriage in Altoona.

Mr. and Mrs. Max Winelander, of Philadelphia, recently announced the engagement of their daughter, Ruth, to Dr. William Hartz, also of that city.

Miss Ethel Carver Litchfield, daughter of Dr. and Mrs. Lawrence Litchfield, of Pittsburgh, was recently married in Paris to Baron Willem Van Boetzelaer.

The engagement of Dr. P. M. Vogt, of Reading, and Miss E. Rebecca Rhoads was recently announced at a dinner given by Miss Mary L. Rhoads at Boyertown.

Dr. Charles Allen Pryor, a former resident of Williamsport, and Miss Augusta Keene, of Beckley, West Virginia, were married on June 23d in the First Presbyterian Church of Huntingdon, W. Va. Dr. Pryor is a surgeon at the Chesapeake and Ohio Hospital.

ITEMS

Mr. B. E. Longwell, of Johnstown, is on a fishing trip to Wisconsin.

Dr. and Mrs. Henry Lovett, of Langhorne, are on an extended trip to Yellowstone Park and the Pacific Coast.

Dr. and Mrs. Charles B. Smith, of Newtown, are on an extended trip to the Northwest and the Pacific Coast.

Dr. and Mrs. John A. Logan, of Hatboro, spent the first week in June on an automobile trip through Massachusetts, New Hampshire and Vermont.

Dr. and Mrs. Frank G. Hartman, of Lancaster, have left on a three months' vacation and tour of the western states, Canada and Alaska.

Dr. B. A. Braude, of Johnstown, is taking a six weeks' postgraduate course in gynecology at the Harvard Postgraduate School of Medicine in Boston.

Dr. and Mrs. Jesse E. Packer, of Newtown, spent the last two weeks of June on an automobile camping trip to the Luray Cavern and Natural Bridge, Virginia.

Dr. Henry D. Jump, of Philadelphia, has accepted the chair of applied therapeutics on the staff of the Woman's Medical College of Pennsylvania, Philadelphia.

Dr. and Mrs. Arthur H. Gerhard, accompanied by their daughters and son, of Overbrook, sailed on July 2d on the Rochambeau for Europe, where they will spend the summer.

Drs. J. D. Keiper and T. E. Mendenhall, of Johnstown, took part in the Amateur Trap Shooting contest of the State of Pennsylvania in Greensburg, during the week of June 18th.

Dr. H. P. Decker has returned to Williamsport after a two years' postgraduate course in diseases and surgery of the eye, ear, nose and throat, at the University of Pennsylvania, Philadelphia.

Dr. John I. Fanz has been elected Professor of Pathology, Hygiene and Bacteriology in the School of Medicine of Temple University to fill the vacancy caused by the resignation of Dr. E. T. Asnis.

DR. T. A. H. STITES has been appointed the Medical Director of Cresson Sanitarium, Cresson, replacing Dr. W. G. Turnbull, who has been appointed the Deputy Commissioner of Health of the State of Pennsylvania.

DR. WILLIAM HARDIN SEARS, of Huntingdon, accompanied by Mrs. Sears, departed for Vienna, Austria, on June 23d, where Dr. Sears will stay several months in original research and study on eye and kindred subjects.

DR. RUTH WEBSTER LATHROP has been appointed Associate Professor of Physiology in the School of Medicine of Temple University. Dr. Lathrop formerly was Professor of Physiology in the Woman's Medical College, Philadelphia.

DR. HOWARD C. FRONTZ, President-Elect, visited the annual outing of the Wayne, Monroe and Lackawanna County Societies at Buck Hill Falls, in the Poconos, on June 26th. Dr. Frontz spoke to the assemblage on "Current Medical Topics."

DR. JAMES M. JOHNSTON, of Huntingdon, has returned home after an extensive trip to the Pacific Coast. During the tour Dr. Johnston attended the meetings of the American Medical Association at San Francisco, California.

DR. FRED HUTCHISON, President of the Huntingdon County Medical Society, started on a vacation trip to the Kootenay Region of Canada, Thessalon, Ontario, on July 5th. Dr. J. M. Keichline, Jr., also of Huntingdon, accompanied Dr. Hutchison, the trip being made by motor.

ON PAGE 714 of the July issue, announcement was made that Dr. Joseph C. Doane, Medical Director of the Philadelphia General Hospital, had been appointed clinical professor of medicine of the Woman's Medical College, Philadelphia. We are advised that this was an error, which we take this opportunity to correct.

MAJOR CHARLES P. STAHR, of Lancaster, has been appointed commanding officer of the 107th Hospital Company, of the Pennsylvania National Guard to succeed the late Dr. Samuel Heller. Dr. Charles S. Duttenhofer, of New Holland, and Dr. Jere J. Sullivan, of Lancaster, have been appointed lieutenants under Major Stahr.

ANNOUNCEMENT was recently made by Governor Pinchot of the appointment of T. Henry Walnut, Philadelphia attorney, as Chairman of the State Workmen's Compensation Board. Mr. Walnut, who since last March has been a deputy attorney general investigating the policing of industrial conflicts, succeeds Harry A. Mackey.

GENERAL NEWS ITEMS

THE INTERNATIONAL HEALTH CONFERENCE was held in San Francisco, June 28th to July 6th, in which medical, public health, and educational organizations of the leading nations of the world took part.

GOVERNOR SMITH of New York State has appointed Dr. Simon Flexner of the Rockefeller Institute of Medical Research, Chairman of the Public Health Council. Dr. Flexner, who has been a member of the Council, succeeds the late Dr. Hermann M. Biggs as its chairman.

DR. MATTHIAS NICOLL, JR., of Albany, has been appointed State Health Commissioner of New York to fill the vacancy caused by the death of Dr. Hermann M. Biggs, who had held the position since 1914. Dr. Nicoll has been connected with the State Department of Health of New York since 1915, and for the past four years has served as Deputy Commissioner.

EXAMINATIONS OF CANDIDATES for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C., ... September 3, 1923
" Chicago, Ill., ... September 3, 1923
" San Francisco, Cal., ... September 3, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

THE MILKMAN CARRIER

Within the last year *The Journal* has published reports of two epidemics due to milkmen who were carriers. Fifty-two persons acquired diphtheria in Austin, Texas,[1] from milk sold by a dairy, one of whose employees had a chronic diphtheric ulcer of the nose. None of these died, because antitoxin was promptly administered in effective doses. In Portland, Ore., 487 persons recently became ill with septic sore throat due to milk from a dairy in which an employee carried hemolytic strepticocci in his throat. Twenty-two of these patients died, because there is no effective preventive measure for this type of infection.[2] These epidemics were not the first of the kind to be reported; they probably will not be the last. It seems, however, that sufficient evidence in the way of sickness and death has accrued to show the importance of the milkman and to indicate that he of all persons on whom the public depends for food should be the cleanest and the healthiest. A simple method of control would be to require him to undergo a physical examination every two or three weeks, or at least as often as once a month. Legislation to this end would be unnecessary if those who supply us with milk realized their responsibility in the matter and adopted this or some such method of eliminating carriers.—*Jour. A. M. A.*, June 16, 1923.

1. Graham, Malcolm, and Golaz, E. H.: Milk-Borne Diphtheria, J. A. M. A., **79**: 1300 (Oct. 14), 1922.
2. Benson, R. L., and Sears, H. J.: A Milk-Borne Epidemic of Septic Sore Throat in Portland, Oregon, J. A. M. A., **80**: 1608 (June 2), 1923.

A DOUBLE PULSE PRESSURE CATASTROPHE

Dr. Owen Lee Day, the eminent daylight specialist, of Roxmore, is enjoying an extensive Mediterranean tour as the result of an obituary in the *Roxmore Weakly*, in which it was stated that a very wealthy patient of his departed this life, the cause being, according to his physician, "too great *purse* pressure." It is hoped the grins of the vulgar pack will cease to confront the sensitive scientifico when he returns to his customary duties. O. PINE.

Dr. O. Pine queries: As certain phrasemongers assure us that 90% of all illnesses recover without medical assistance, and as, after listening to the claims of various specialists, it is very evident that the portions of the remaining 10% that escape death owe their salvation to the specialists, can you wonder that the mere physician is approaching alleged extinction?

Dr. O. Pine queries: Will the day ever arrive when the medical profession will make a vigorous drive against inefficient, slacker medical bureaucracy?

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Seventy-third Annual Session of the Medical Society of the State of Pennsylvania

Pittsburgh, October 1-4, 1923

PRELIMINARY SCIENTIFIC PROGRAM

GENERAL MEETING

WILLIAM PENN HOTEL: BALL ROOM.

Tuesday, October 2, 10 A. M.

Call to Order by the President.
LAWRENCE LITCHFIELD, Pittsburgh.

Invocation.

Address of Welcome.
HON. WILLIAM A. MAGEE, Mayor of the City of Pittsburgh.

Address of Welcome.
ERNEST W. WILLETTS, *President*, Allegheny County Medical Society.

Presentation of Program.
THOMAS G. SIMONTON, Pittsburgh, Chairman of the Committee on Scientific Work.

Announcement of Entertainments.
HAROLD A. MILLER, Chairman of the Local Committee on Arrangements.

Introduction of Delegates from Other Societies.

Installation of the President-Elect.

Stenographer—MISS F. E. DILLAN, Hume-Mansur Bldg., Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

No. 1.

President's Address. HOWARD C. FRONTZ, Huntingdon.

No. 2.

The Importance of Foci of Infection in the Mouth from a Dentist's Viewpoint. (By invitation.) (Lantern demonstration.) (20 minutes.)
L. WALLACE OHL, D.D.S., Pittsburgh.

OUTLINE. Reports on selected cases in which mouth pathology has been eliminated. Lantern slides showing normal and pathologic conditions of the mandible and maxillæ.

Discussion opened by P. V. MCPARLAND, D.D.S., Pittsburgh, and C. J. HOLLISTER, Department of Health, Harrisburg.

No. 3.

The Laurelton State Village and Pennsylvania's Problem of Mental Deficiency. (15 minutes.)
MARY M. WOLFE, Laurelton.

OUTLINE. The Laurelton State Village was established in 1913 in an effort to lessen mental deficiency in Pennsylvania by segregating feeble-minded women of child-bearing age. In the ten years that have passed since that time the state has provided for 150 girls and women at Laurelton. The most recent estimate of the number of mentally defective women of child-bearing age in Pennsylvania approximates 8,000 to 10,000. If any practical solution of this probem in the commonwealth is to be obtained, accommodations for mental defectives must be greatly increased; better use must be made of the institutions in existence; types of defectives most menacing to the state must be given preference in admission to institutions; cases, especially girls, must be placed under supervision earlier; the public must be educated to surgical methods of preventing reproduction, especially as to male defectives; and immigration of lower mental types must be controlled.

Discussion opened by WILLIAM C. SANDY, Director of the Bureau of Mental Hygiene, Harrisburg, and WILLIAM W. RICHARDSON, Mercer.

Wednesday, October 3, 9 A. M.

No. 4.

Ocular Manifestations from a Traumatic Encysted Hemorrhage in the Brain. (10 minutes.)
EDGAR J. STEIN. Lancaster.

OUTLINE. History of traumatic injury with extremely meager symptoms, only symptom being ocular with occasional pain. After several months pain became intense, ocular symptoms remaining the same. Operation. Evacuation of cyst. Recovery. Some observations on manometer readings.

Discussion opened by CHARLES W. BURR, Philadelphia.

No. 5.

Diagnosis and Treatment of Tonsillar Infection. (10 minutes.) JUDSON DALAND, Philadelphia.

Discussion opened by JOHN A. LICHTY, Pittsburgh, and WILLIAM EGBERT ROBERTSON, Philadelphia.

No. 6.

The Relation of Cardiovascular Disease to Symptoms in the Abdomen. (10 minutes.)
JOHN A. LICHTY, Pittsburgh.

OUTLINE. A brief résumé of anatomical relations. Reference to the more or less usual abdominal symptoms which may arise in the course of cardiovascular disease. Special reference to enlargements of the liver and also to so-called abdominal angina. The effect, on the other hand, of certain digestive disturbances upon cardiovascular conditions. Conclusions drawn bearing upon diagnosis and treatment.

Discussion opened by WILLIAM W. G. MACLACHLAN, Pittsburgh, and JAMES E. TALLEY, Philadelphia.

No. 7.

House Dust in Asthma. (10 minutes.)
GEORGE P. MEYER, Philadelphia. (Guest.)

OUTLINE. Introductory. Newer etiologic factors, with especial emphasis on house dust. Diagnosis. Skin tests. Treatment. Analysis of over one hundred cases.

Discussion opened by J. ALEXANDER CLARKE, JR., and JAMES S. MCLAUGHLIN.

SYMPOSIUM ON ANURIA

No. 8.

Postoperative Anuria. (15 minutes.)
FLOYD E. KEENE, Philadelphia.

OUTLINE. Résumé of the literature bearing upon this subject. Possible etiological factors. Frequency of the condition. Diagnosis Importance of adequate preoperative examinations in order to avoid such a complication. Method of treatment.

No. 9.

Calculous Anuria. (20 minutes.)
JOHN R. CAULK, St. Louis, Mo. (By invitation.)

OUTLINE. Definition. Consideration of the different types. Importance of complete urological study in association with roentgenological investigation. Predisposing factors. Treatment.

No. 10.

Theoretical Discussion of Anuria. (15 minutes.)
J. EDWIN SWEET, Philadelphia.

Outline. Death from anuria is due to the retention of some specific but unknown urinary constituent, not to the retention of all urinary constituents. The question will, therefore, be raised for discussion whether we should not consider the possibility of an essential anuria; a condition in which, the other urinary constituents being excreted in sufficient amounts, there is a specific retention of the substance which kills.

Discussion of papers Nos. 8, 9 and 10 opened by Alexander Randall, Philadelphia; Theodore Baker, Pittsburgh, and Henry D. Jump, Philadelphia.

Note.—The Program Committee is anxious that members who have had cases of anuria briefly report them in the general discussion.

Thursday, October 4, 2 P. M.

No. 11.

State Papers.

(a) Quarantine Laws. (5 minutes.)
J. Moore Campbell, Harrisburg.

(b) Prevention of Diphtheria. (10 minutes.)
J. Bruce McCreary, Harrisburg.

No. 12.

High Voltage X-Ray in Cancer. (15 minutes.)
John F. McCullough, Pittsburgh.

Outline. (1) Interest resulting from publicity emanating from Europe. (2) Necessity for the general profession to be acquainted with what is offered. (3) Early development of x-ray therapy. (4) Elements and principles employed in x-ray therapy. (5) Recent advances. (6) Results from personal application of the high voltage x-rays.

Discussion opened by George W. Grier and Forrest L. Schumacher, Pittsburgh.

No. 13.

Surgical Reconstruction of the Nose. (Lantern demonstration.) (15 minutes.)
John W. Bransfield, Philadelphia.

Outline. Brief history of rhinoplasty. Principles of plastic surgery. Value of various types of supporting structures used with special reference to advantages of cartilage. Use of "peak roof" method of Dorrance.

Discussion opened by Fielding O. Lewis, and George M. Dorrance, Philadelphia.

No. 14.

Poisoning of Children by Caustic Alkalies Sold in Grocery Stores. (15 minutes.)
Chevalier Jackson, Philadelphia.

Outline. Reports of cases of fatal burns of the esophagus from the swallowing of lye and various washing powders. Description of lesion found; burns of the mouth, ulcerative esophagitis, cicatricial stenosis, absolute atresia of esophagus; acute gastritis. Description of the labels on the containers showing the lack of conspicuity as to the dangerous nature of the contents. Evidence of parents and others that did not realize the poisonous nature of the alkalies. Necessity for remedial legislation.

Discussion opened by Ellen Patterson, Pittsburgh.

No. 15.

The Practical Use of Insulin in the Treatment of Diabetes. (15 minutes.)
Orlando H. Petty, Philadelphia.

Outline. Insulin in diabetic coma. Insulin in the complications of diabetes, as persistent vomiting and gangrene and infections. Insulin in preparation for surgical operations on diabetic patients. Insulin for diabetics with low tolerance, also those of negative tolerance. The use of Insulin in the preliminary treatment of diabetes to shorten the patient's stay in the hospital.

Discussion opened by Robert L. Pittfield, Philadelphia (Guest), and Howard G. Schleiter, Pittsburgh.

No. 16.

The Trend in Modern Obstetrics. (15 minutes.)
Edward A. Schumann, Philadelphia.

Outline. The features peculiar to obstetrics of to-day are minute and exaggerated prenatal care, surgical induction of labor at established term, and surgical interference in presumably normal cases with the object of shortening or eliminating the second stage of labor. Analysis shows that the vast majority of stillbirths are the result of birth traumatism, and that only a small proportion may properly be ascribed to ineffective prenatal care. Surgical interference in its relation to morbidity and mortality of mother and child has to be studied with the aid of voluminous and accurate statistics.

Discussion opened by Harold A. Miller, Pittsburgh.

SECTION ON MEDICINE

HAWAIIAN ROOM.

Officers of Section

Chairman—Adam J. Simpson, 401 E. Twelfth St., Chester.

Secretary—Charles Falkowsky, Jr., 327 Spruce St., Scranton.

Executive Committee—Howard G. Schleiter, Pittsburgh; Edward J. G. Beardsley, Philadelphia.

Stenographer—Mrs. Irene Hilton Snyder, 1641 Marshall Field Annex, 25 E. Washington St., Chicago, Ill.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman.
Adam J. Simpson, Chester.

No. 2.

Points of Contact Between Internal Medicine and Psychiatry. Edward A. Strecker, Philadelphia.

Outline. Why are the principles and aims of psychiatry frequently misunderstood by internists? The psychic factor in somatic disease. The somatic factor in mental disease from an analysis of 100 consecutive cases. Even if the findings do not indicate etiological relationship they do suggest strongly the importance of physical factors and provide a point of helpful contact. What may psychiatry expect from internal medicine? A better understanding of somato-psychic relationship, possible contribution to etiology, treatment methods, propbylaxis. What may internal medicine expect from psychiatry?

Discussion opened by Frederic Leavitt, Philadelphia.

No. 3.

The Rôle of Nutrition in the Etiology, Course and Prevention of Mental Disorders.
William W. Richardson, Mercer.

Outline. The striking frequency of a poor state of nutrition in acute mental cases. Well known effect of emotion, especially depressive emotion, on the nutritional state. An improved state of nutrition, as manifested by a gain in weight, necessary before recovery can take place in most acute psychoses. Analysis of a series of cases to support this contention. Discussion of the moot point as to whether the gain in weight or the mental improvement occurs first. In view of the facts brought out, it is the manifest duty of the practitioner to watch closely the nutritional state of his patients if mental health is to be preserved. A proper insistence upon the maintenance of good state of bodily nutrition one of the most essential features of a thorough-going mental hygiene program. Striking cases to illustrate the points made in the paper.

Discussion opened by George J. Wright, Pittsburgh, and Clifford B. Farr, Philadelphia.

No. 4.

Hemorrhagic Nephritis. (Lantern demonstration.)
James P. O'Hare, Boston. (By invitation.)

Outline. A series of cases of hemorrhagic nephritis will be presented from a clinical point of view with the pathology in at least two cases.

Discussion opened by Howard G. Schleiter, Pittsburgh.

No. 5.

Facts That Govern the Proper Diet in Nephritis.
Roy R. Snowden, Pittsburgh.

Outline. The kidney function is primarily the excretion of waste products. One of the most important elements in the treatment of any type of nephritis is rest for the kidneys. In order to institute this rest it is most important that the demands made upon it for the elimination of waste products be reduced to the minimum; this is accomplished in large part by the diet, reducing to the minimum those foods that leave waste products that may be excreted by the kidney.

Discussion opened by Edward Weiss, Philadelphia, and George A. Clark, Scranton.

No. 6.

Recent Investigations Concerning Specificity and Practical Value of the New Complement Fixation Reaction in Syphilis.
John A. Kolmer, Philadelphia.

No. 7.

The Interpretation of the Pathogenesis of Lobar Pneumonia in the Light of Experimental Study.

Howard H. Permar, Pittsburgh.

Outline. Older views on the pathogenesis of lobar pneumonia, based on a study of the pneumonic lung. Later views, based on the bacteriologic and on experimental pathologic investigations. The more recent investigations in the field of experimental pathology, which suggest primary lymphatic inflammation and a primary dissemination in the lung by these channels. Personal investigations, using rabbits, indicate the validity of the older claims for a primary aërogenic dissemination with parenchyma first involved in multiple foci beyond the terminal bronchioles. Lobar distribution in the experimental animals attained in 24-36 hours by coalescence of multiple focal lesions, aided by the extension of the inflammatory reaction along lymphatics. The frequency of this type of inflammatory reaction in the human. The relation of the secondary lymphangitis to septicemia, pericarditis, pleurisy and other complications.

Discussion opened by Stanley P. Reimann, Philadelphia.

Wednesday, October 3, 2 P. M.

Report of Executive Committee.
Election of Section Officers.

No. 8.

Nervous Indigestion: A Résumé of One Hundred Cases. J. Quincy Thomas, Conshohocken.

Outline. Nervous indigestion, which is a diagnosis made by many physicians and sometimes patients, is seldom correct. A thorough study of these cases will often show that many patients are suffering from such conditions as pulmonary tuberculosis, organic conditions of the stomach and intestines, heart and renal diseases, gall-bladder and nervous system. True functional disturbances of the gastro-intestinal tract are in the minority.

Discussion opened by E. J. G. Beardsley, Philadelphia.

No. 9.

The Ambulatory Treatment of Gastric Ulcer.

Martin E. Rehfuss, Philadelphia.

Discussion opened by John A. Lichty, Pittsburgh.

No. 10.

The Management of Carcinoma of the Stomach.

Joseph Sailer, Philadelphia.

Outline. The treatment of defects in secretion; the treatment of defects in motility; the treatment of defects in nutrition; the question of operation.

Discussion opened by Joseph C. Ohail, Pittsburgh.

No. 11.

Heart Disease and Pregnancy.

James D. Heard, Pittsburgh.

Outline. To solve the problem of management of the pregnant cardiopath, it is necessary to secure coöperation between obstetrician and internist; initiative rests largely with obstetrician. Cardiac clinics and medical consultants in connection with obstetric service are of relatively little value unless routinely used. Preventive measures for coming generation of mothers must be applied by this generation of physicians. Pregnant cardiacs require careful medical supervision throughout pregnancy; under such conditions therapeutic abortion seldom indicated. Methods of handling patients whose heart failure is complicated by pregnancy.

Discussion opened by Andrew P. D'zmura, Pittsburgh, and Harold A. Miller, Pittsburgh.

No. 12.

The Evaluation and Treatment of Abnormal Blood Pressures. David Riesman, Philadelphia.

Discussion opened by James E. Talley, Philadelphia.

No. 13.

The Pathology of Diseases of the Pancreas.

Robert A. Keilty, Danville.

Outline. The purpose of this paper is to present briefly the pathologic lesions which are commonly met with in the pancreas, with a detailed description of the pancreas in diabetes.

Discussion opened by Henry D. Jump, Philadelphia, and George B. Sickel, Chester.

No. 14.

A Consideration of Polycythemia with Report of Cases Illustrating Several Varieties.

Edward Weiss, Philadelphia.

Outline. Definition of terms polycythemia, erythremia and erythrocytosis. Anology to leukemia and leucocytosis. Presentation of four cases illustrating several varieties of polycythemia and emphasizing necessity of searching for the cause of condition.

Discussion opened by W. W. G. Maclachlan, Pittsburgh.

Thursday, October 4, 9 A. M.

No. 15.

The Management of Convalescence.

Arthur C. Morgan, Philadelphia.

Outline. Clearing of active symptoms does not mean complete recovery from any infection or affection. The physician's duty is to keep patient under observation until such time as effects of illness have entirely subsided. Danger of overwork of heart, effort syndrome, renal damage and psychasthenia because of overwork before recovery is fully established. Discussion of leading points with suggestions for treatment.

Discussion opened by Jesse L. Lenker, Harrisburg.

No. 16.

The Importance of an Exact Diagnosis in Acute Articular Rheumatism.

W. Egbert Robertson, Philadelphia.

Outline. A plea for the limitation of the term rheumatism. True rheumatic fever essentially heart disease. A loose use of the word rheumatism more or less unconsciously breeds a spirit of neglect, if not contempt. Hence the impossibility of procuring for the real victim, the prolonged rest so absolutely essential in the management of heart disease.

Discussion opened by Judson Daland, Philadelphia.

No. 17.

Diagnosis and Treatment of Pernicious Anemia and Severe Secondary Anemias.

Alfred Stengel, Philadelphia.

Outline. Discussion of the nature of pernicious anemia involving a consideration of the conditions to be followed in classifying a severe anemia as pernicious anemia. Particular reference will be made to the question whether pernicious anemia is invariably a hemolytic form of anemia, and the discussion of the importance of cord lesions as diagnostic criteria will be offered.

Discussion by Lawrence Litchfield, Pittsburgh, and James D. Heard, Pittsburgh.

No. 18.

Blood Transfusion, Its Indications and Technique.

Harold W. Jones, Philadelphia.

Outline. Citrated vs. whole blood transfusions. The cause of reaction. Transfusion in children. The reaction of blood to transfusion in primary and secondary anemia. Transfusion in purpura. Transfusion in septicemia. Transfusion in nephritis. Cause for lack of general use of transfusion in medical conditions.

Discussion opened by Alexander H. Colwell, Pittsburgh.

No. 19.

Basal Metabolism. The Value of its Estimation.

Henry K. Moiler, Philadelphia.

Outline. The known disorders of the body that have increased or decreased basal metabolic rates. Its value in the differential diagnosis of these diseased conditions, most difficult at times to differentiate, viz., thyroid, pulmonary tuberculosis. The discussion of the value of the basal metaholic rate in determining the proper kind of treatment and the degree of its efficiency in diseases having abnormal metabolic rates with special reference to thyroid gland disturbances.

Discussion opened by Roy R. Snowden, Pittsburgh.

No. 20.

The Treatment of Encephalitis.

George Wilson, Philadelphia.

Discussion opened by William W. Richardson, Mercer, and John H. W. Rhein, Philadelphia.

No. 21.

Migraine with Especial Reference to Paralytic Manifestations. George J. Wright, Pittsburgh.

Outline. The usual phenomena in migraine are sensory, but occasionally definite paralytic symptoms are seen. If the cause of these symptoms is a focal cerebral angiospasm, migrainous attacks in the degenerative period of life are not free from danger.

Discussion opened by William H. Mercur, Pittsburgh.

SECTION ON SURGERY

BALL ROOM.

Officers of Section

Chairman—William L. Estes, Jr., Bethlehem.

Secretary—Harold L. Foss, Geisinger Hospital, Danville.

Executive Committee—T. Turner Thomas, Philadelphia; Elwood N. Kirby, Philadelphia; Alfred C. Wood, Philadelphia.

Stenographer—Mrs. M. C. Repp, 926 S. Sixtieth St., Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman.
William L. Estes, Jr., S. Bethlehem, Pa.

No. 2.

Contraindications to Cholecystectomy.
John H. Gibbon, Philadelphia.

Outline. It is admitted that formerly many gall-bladders were drained which should have been removed, but it is believed that the reverse is true to-day. The condition of the gall-bladder does not alone constitute the criterion on which we must decide between drainage and removal. The condition of the patient and the ability and the experience of the operator are factors which must be considered.

It would be well at this time to try to determine the type of gall-bladder and the other conditions which would render drainage a better procedure than removal. And it is the object of the writer to attempt this determination.

No. 3.

Recurrent Cholelithiasis.
H. Ryerson Decker, Pittsburgh.

Outline. Recurrence due to calculi overlooked at previous operation or those formed anew. Frequency about 2%. Site usually in gall-bladder or common duct. Main factors same as in primary cholelithiasis—duct obstruction and infection. Clinical features—Case Reports. Treatment. Surgical prophylaxis important; includes early primary operation, thoroughness in removal of calculi, thorough drainage in infected cases. Vaccine therapy may help. Medical measures of doubtful utility.

Discussion of papers Nos. 2 and 3 opened by Donald Guthrie, Sayre, and (by invitation) Thomas Cullen, Baltimore, Md.

No. 4.

Treatment of General Peritonitis Following Ruptured Appendix. Albert F. Hardt, Williamsport.

Outline. Severity of peritonitis depends upon degree and extent of peritoneal inflammation and type of infection. Operability depends upon degree and extent of peritonitis, appearance of patient, rate and character of pulse, temperature, extent and degree of muscular rigidity, leukocyte count, etc. Circumscribed and diffuse peritonitis. Operation indicated in circumscribed peritonitis. In diffuse peritonitis, when patient is very ill, Oschner treatment usually preferable. When patient is not very ill, operation indicated. Much diversity of opinion regarding Oschner treatment. Time to operate one of most difficult problems in surgery. Selection of anesthetic of great importance. Advantages of nitrous oxid or local anesthesia. Adequate drainage most essential. Postoperative treatment should be carefully managed. Opinions of surgeons.

Discussion opened by Walter Shaw, Ridgway, and Randall B. Hayes, Jersey Shore.

No. 5.

Chronic Duodenal Obstruction. (Lantern demonstration.) Jesse P. Griffith, Pittsburgh.

Outline. Frequency. Embryologic and anatomic factors to be considered as factors favoring a duodenal stasis. "The duodenum is a complicated structure of considerable importance and whilst it will withstand considerable insult in the form of adhesions, or being a part of a ptosis of contiguous structures which interferes with its mechanism, there comes a time when the normal dependent portion becomes embarrassed to such an extent that there is more or less of a constant residue of duodenal contents upon the mechanics of the upper gastro-intestinal tract and a toxic influence in a general way."

Etiology of chronic duodenal obstruction. Ptosis of transverse colon with or without stomach involved. Jejunum dropping perpendicularly instead of having the normal sweep of the bowel into the left renal fossæ; such direct drop produces a sharp angulation of the duodeno-jejunal angle. Small bowel with a short mesentery pulling on the superior mesenteric vessels. Various adhesive bands congenital and acquired. Cysts and growths at the head of the pancreas, etc. Symptomatology. Depends a great deal on the area of duodenum involved and extent of involvement. Treatment—medical, surgical. Surgical: first portion—dividing adhesions, removal of adherent gall-bladder, etc. For the chronic dilated dependent portion of the duodenum where we have a more or less constant residue the operation of duodenojejunostomy appears to be the procedure of choice. Report of cases operated. Technique of duodenojejunostomy. Lantern slides showing various types of obstruction and steps in operation Conclusions.

Discussion opened by John A. Lichty, Pittsburgh, and John B. Deaver, Philadelphia.

No. 6.

The Practice of Surgery under the Pennsylvania Compensation Laws. Lever F. Stewart, Clearfield.

Outline. The surgeon's objection to the law. The fees for first thirty days. The ruling covering death in ten days. The relation of hospital to surgeon. The right to sue for fees. The standing of an expert.

The law's objection to the surgeon; testimony at hearings. Ignorance of law. Divergence of opinion. Surgeon's failure to salvage. Surgeon's neglect of mental treatment of injured.

The injured's criticism of the surgeon: failure to follow up, after discharge. Failure to explain the possibility of charity treatment. Failure to reassure injured. Failure to salvage. Reporting of cases for reconstruction surgery and rehabilitation.

The insurance company's and employer's gain as a result of rehabilitation. The profit in human salvage from a financial point of view. Average saving $2,000.00 per case. The surgeon's opportunity to force reform by virtue of achievement.

Discussion opened by Alfred C. Wood, Philadelphia, and Jonathan M. Wainwright, Scranton.

Wednesday, October 3, 2 P. M.

SYMPOSIUM ON PELVIC SURGERY

No. 7.

Practical Points in Pelvic Surgery.
Thomas S. Cullen, Baltimore, Md. (By invitation.)

Outline. The operative and postoperative difficulties the author has met with in treating cervical and perineal lesions. Examples of pelvic and lower abdominal conditions where operation has appeared impossible or seemed fraught with great danger and where by the adoption of some simple procedure the operation became a relatively easy one to perform.

No. 8.

Preservation of the Ovaries in Pelvic Surgery.
Brooke M. Anspach, Philadelphia.

Outline. The function of the ovary and its value to the individual; effects of partial, unilateral and bilateral removal and the influence of age, social position and nervous equilibrium. Technique of pelvic operations which conserve the ovary and the importance of preserving its blood supply. Degeneration of conserved ovaries. Resection versus total removal of the ovary on one side. Ovarian transplants; ovarian substance and its therapeutic value. Results of conservation of ovaries in a series of consecutive private cases. Conclusions.

No. 9.

A Review of the Present Status of Minor Surgical Procedures in Gynecology.
Raleigh R. Huggins, Pittsburgh.

Outline. Many minor operations may be avoided in the future by better care in the treatment of women after delivery. Attention during the puerperium and later, if necessary, will lessen the number of chronic lesions of the cervix and cases of subinvolution, which often result in displacements and later lead to the necessity for operative treatment. Good judgment is necessary in the selection of various gynecological operations which are sometimes used without careful consideration of both local and general condition.

Discussion of papers Nos. 7, 8 and 9 opened by Harvey Smith, Harrisburg, and Elmer Hess, Erie.

No. 10.

Surgical Treatment of Complete Uterine Prolapse.
Barton C. Hirst, Philadelphia, Pa.

Outline. The necessity of understanding the complex nature of the injuries causing prolapsus uteri. The interdependence and independence of rectocele, cystocele and the injuries or overstretching of the uterine ligaments. There may be prolapse with or without either rectocele or cystocele and there may be either rectocele or cystocele without prolapse. In the operation each division of the genital canal must be dealt with separately, according to its condition; namely, posterior wall and pelvic floor, supports of the bladder and uterine ligaments in addition to the treatment required by the uterus itself for elongation of the lower uterine segment, hypertrophic metritis, ulceration of the cervix and hyperplasia of the endometrium.

No. 11.

The Present Status of Treatment of Carcinoma of the Uterus. John G. Clark, Philadelphia.

Outline. Review of statistics relative to the radical operation for cancer of the cervix and of the fundus in comparison with the ultimate results obtained by the employment of irradiation. A review of the literature of these two subjects with comments based upon personal experience.

No. 12.

Focal Infection as a Danger to the Pregnant Woman. James L. Gilmore, Pittsburgh.

Outline. Diagnosis, predisposing cause of early toxemia, miscarriage, late toxemia, pyelitis and death of the fetus in utero. Treatment; best time; danger; results. Conclusions.

Discussion of papers Nos. 10, 11 and 12 opened by Floyd E. Keene, Philadelphia, and Samuel J. Waterworth, Clearfield.

Thursday, October 4, 9 A. M.

SYMPOSIUM ON SURGERY OF THE KIDNEY AND URETER

No. 13.

Surgery of the Kidney and Ureter. (Lantern demonstration.)

Edward S. Judd, Rochester, Minn. (By invitation.)

Outline. Surgical approach to the kidney. Incision with the preservation of the ilioinguinal and iliohypogastric nerves. Exposure of the renal pelvis. Transverse pyelotomy. Removal of stones, fluoroscopic examination; suture of the pelvic opening. Indications for nephrectomy. Two-forcep method of controlling the vascular pedicle. Mortality in nephrectomy for various conditions. Ureter: Surgical approach for stone in the uretero-vesical area. Incision for lesions in the upper ureter. Complete nephro-ureterectomy (without contamination of the operative field) for infections and malignant conditions of the kidney and ureter.

No. 14.

Modern Diagnostic Methods in Renal and Ureteral Surgery. Enoch H. Adams, Danville.

Outline. The determination of kidney function by use of phenolphthalein; by elimination of indigocarmin; differential functional tests and the field of biochemistry. Pyelography; Media used for injecting pelvis of kidney. The use of shadow catheters in locating stones. Advancement since the advent of the Bucky diaphragm in renal and ureteral roentgenology. Localization of ureteral and kidney stones. The significance of hematuria in tuberculosis, tumors, stones and acute nephritis. Differentiation of renal, appendicular and gall-bladder conditions. Kidney infections, pyelonephrosis, pyelitis, tuberculosis, etc. Necessity for coöperation between pathologist, roentgenologist and clinician in the study of renal and ureteral conditions.

No. 15.

Treatment of the Small Ureteral Calculus. (Lantern demonstration.) Carlyle Haines, Sayre.

Outline. The frequency with which ureteral calculi confront the surgeon and the general practitioner, and the importance of making a correct diagnosis to lessen, if possible, otherwise needless surgery. The factor played by strictures and anomalies in preventing calculi from passing. Only a small percentage of calculi require surgery for their removal. The majority will pass if given time and assisted by ureteral dilatation. The need of routine ureteral catheterization to determine the presence of postoperative strictures following ureterotomy for calculi.

No. 16.

Treatment of Accidental Occlusion of the Ureter. P. Brooke Bland, Philadelphia.

Outline. Recurrent observations indicate that occlusion, partial or complete, occurs much more frequently than is generally believed. The lesion results mostly from deep pelvic surgery as performed by the gynecologist and particularly in the operation of panhysterectomy. The radical operation for uterine carcinoma exposes the ureters to unusual danger. Accidental injury or occlusion probably occurs more frequently during the prosecution of this operation than any other. In the modern method of removing the uterus through the vagina, ureteral injury or occlusion is not likely to occur, vaginal hysterectomy as formerly performed by progressive ligation from below upward was not infrequently responsible for accidental injury to both the bladder and ureters. With the etiology of the accident in mind the best treatment lies along prophylactic lines.

Discussion of papers Nos. 13, 14, 15 and 16 opened by Benjamin A. Thomas and F. Hurst Maier, of Philadelphia, and Charles H. Aufhammer, Pittsburgh.

No. 17.

Review of Five Years of Fracture Work with Special Reference to Open Reduction. (Lantern demonstration.) Hugh E. McGuire, Pittsburgh.

Outline. Report of cases of fracture of skull, spine, pelvis, clavicle, scapula, humerus, bones of forearm, femur and bones of the lower leg—900 cases in all. Various methods of treatment discussed, and reasons given for the various types of operations.

Discussion opened by T. Turner Thomas, Philadelphia, and William L. Estes, Sr., S. Bethlehem.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

ROOMS B-C.

Officers of Section

Chairman—William Hardin Sears, 514 Penn St., Huntingdon.

Secretary—Nelson S. Weinberger, Sayre.

Executive Committee—George B. Jobson, Franklin; Luther C. Peter, Philadelphia; George M. Coates, Philadelphia.

Stenographer—Miss F. E. Dillan, Hume-Mansur Bldg., Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

Address of the Chairman.

William Hardin Sears, Huntingdon.

No. 1.

Concerning Vernal Conjunctivitis—Some Phases Connected with its Duration, Clinical Features, Prognosis and Treatment.

William C. Posey, Philadelphia.

Outline. Analysis of a number of cases observed over a long period of years. Most cases show a tendency to self-limitation in from eight to ten years. The more aggravated types may persist for twenty years or even longer. Prognosis for complete recovery in the former class of cases good; in the latter, more guarded in amount of corneal complications, either from opacities resulting from pressure by the unusually large and hard granulations sometimes observed in this type, or from distortion of the cornea in consequence of the weakening of the tissues of the membrane by pericorneal inflammation, leading in a few cases to conical cornea. Gongales observations. Heredity at times factor in the pathogenesis. Report of cases Doubtful influence of locality as a determining factor. Of all remedial agents radium thus far the best, alleviating collyria; preferable to any caustics. In aggravated cases paring down of the hardened granulations with a sharp knife is necessary to avoid corneal injury from pressure.

Discussion opened by G. Oram Ring, Philadelphia.

No. 2.

Personal Experience in the Management of Heterophoria. William Zentmayer, Philadelphia.

Discussion opened by William W. Blair, Pittsburgh.

No. 3.

The Surgical Treatment of Squint with Special Reference to the Choice of Operation Best Suited to an Individual Case.

Luther C. Peter, Philadelphia.

Outline. In the first part of the paper the author reviews the mechanical effects of tenotomy, tucking and resection with advancement. Resection is further divided into those operations which include a shortening of the muscle alone and those in which the capsule and conjunctiva are shortened and advanced with the muscle. In the second part are discussed the indications and contraindications of these operations in

alternating and unilateral convergent and divergent squint. The conclusions drawn are: 1. Tenotomy is rarely justifiable and in most instances contraindicated. 2. Tucking, although an uncertain surgical procedure, may be used to advantage in selected cases. 3. Resection, with or without advancement as indicated, is at all times the operation of choice.

Discussion opened by Burton Chance, Philadelphia.

No. 4.

The Rôle of Impacted and Unerupted Teeth in Ocular Disorders. (Lantern demonstration.)
Edward Stieren, Pittsburgh.

Outline. Various ocular disorders, pathological and functional, may have their origin in an impacted or unerupted tooth. Report of cases and review of literature.

Discussion opened by George B. Jobson, Franklin.

No. 5.

Remarks upon the Removal of the Cataractous Lens by a Vacuum Method; with Presentation of an Instrument for Preventing Vitreous Loss.
Frank C. Parker, Norristown.

Outline. The Barraquer operation is far superior to the Smith operation both in technique and safety. Removal of the cataractous lens by means of the vacuum procedure is very interesting, and when accomplished without mishap, all that can be desired. More skill is required and more extreme care must be exercised to accomplish a good end result than is demanded by the regular combined extraction. Barraquer's procedure may be modified by employing the usual methods of incision and iridectomy, then bringing into use the vacuum for extraction of the lens. The vacuum method will probably never supplant the usual procedures in common practice for the following reasons: 1. The only advantage is the elimination of a subsequent needling operation which is nothing to worry about. 2. Visual results are no better. 3. Increased dangers. 4 More skill required. 5. Not adapted to the majority of operators. 6. Too many eyes will be lost in perfecting a procedure that offers no better end results. As many operators will try this method, I have devised a vacuum cup handpiece which makes it impossible to withdraw more than one, or at the most, two minims of vitreous, should the instrument be plunged directly into the vitreous, with any amount of vacuum in operation. Buccal method of creating vacuum found to be satisfactory.

Discussion opened by Burton Chance, Philadelphia.

No. 6.

Recurrent Hemorrhage Into the Vitreous.
Leonard G. Redding, Scranton.

Discussion opened by Clarence M. Harris, Johnstown.

Wednesday, October 3, 2 P. M.

Presentation of Cases, Specimens and Instruments.
Report of Executive Committee.
Election of Officers.

No. 7.

The Ophthalmoscope in General Medical Diagnosis. (By invitation.) Edward Jackson, Denver.

SYMPOSIUM ON SINUS THROMBOSIS

No. 8.

Etiology and Diagnosis of Cavernous Sinus Thrombosis. (Lantern Demonstration.) George E. deSchweinitz, Philadelphia.

Discussion opened by Edward B. Heckel, Pittsburgh.

No. 9.

Etiology and Diagnosis of Lateral Sinus Thrombosis.
S. MacCuen Smith, Philadelphia.

Outline. Complicates both acute and chronic otitic suppuration; in former years more frequently found in the chronic type, but recently oftener in the acute form of the disease. Marasmic conditions a causative factor. In simple uncomplicated cases the diagnosis should be comparatively definite. Temperature, pulse, respiration, good mentality, edema and tenderness over mastoid tip, posterior triangle and mastoid vein quite characteristic. Positive blood cultures an aid, but thrombosis may be present with negative findings. Rigors suggestive and repeated chills almost diagnostic of sinus thrombosis; their continuation ominous. Symptom-complex makes diagnosis difficult. In last analysis trained judgment of clinician must determine the diagnosis.

Discussion opened by John F. Culp, Harrisburg.

No. 10.

Treatment of Cavernous and Lateral Sinus Thrombosis.
Ewing W. Day, Pittsburgh.

Outline. Treatment surgical. Exposure and inspection of sinus. Location, nature and extent of clot. Control of hemorrhage. Jugular involvement. Ligation versus excision. Cavernous thrombosis, treatment generally unsuccessful.

Discussion opened by J. Homer McCready, Pittsburgh, and Fielding O. Lewis, Philadelphia.

Thursday, October 4, 9 A. M.

Exhibition of Specimens and Instruments.
Presentation of Cases.

No. 11.

Bronchoscopic Treatment of Pulmonary Suppurations and Bronchial Asthma. (Lantern demonstration.)
Moore, Philadelphia.
Robert M. Lukens, Philadelphia.

Outline. Types of cases best suited for treatment. Technique of treatment followed at the Bronchoscopic Clinic, Jefferson Hospital. Reports of cases under observation for one year. Observation on the bronchoscopic treatment of bronchial asthma and methods used. Report of work done in past six months on the bacterial findings in tracheobronchial asthma.

Discussion opened by Frederick J. Bishop, Scranton.

No. 12.

The Gradenigo Symptom Complex. (By invitation.)
W. B. Chamberlain, Cleveland, Ohio.

Discussion opened by George M. Coates, Philadelphia.

No. 13.

Foreign Bodies in Respiratory Tract and Esophagus. Clinical Notes of General Interest. (Lantern demonstration.) Ellen Patterson, Pittsburgh.

Outline. Necessity for consideration of foreign body in etiology of disease of the respiratory tract and esophagus in children. Possibility of foreign body coincident with onset of acute exanthemata in children. Advisability of roentgenographic study of all children in hospitals for foreign body.

Discussion opened by Chevalier Jackson, Philadelphia.

No. 14.

The Present Status of Vestibular Tests from the Standpoint of the Otologist.
Lewis Fisher, Philadelphia.

Discussion opened by Seth A. Brumm, Philadelphia, and George W. MacKenzie, Philadelphia.

No. 15.

Diagnosis and Treatment of Chronic Maxillary Sinusitis. John B. McMurray, Washington.

Outline. 1. Between the most advanced maxillary sinus disease and the normal sinus, all grades of sinus diseases may exist. It is much easier to prove that a sinus has a well advanced disease than it is to detect a sinus with a mild involvement, while the latter may have a very deleterious effect on the general health of the patient. 2. The clinical types of maxillary sinus disease. 3. Diagnosis depends upon history, inspection of nares, transillumination and x-ray. The result of examination will divide the cases into two classes: (a) Those with unquestioned sinus disease as proved by history, inspection, transillumination and x-ray; (b) Those in which the history is suggestive but cannot be definitely decided by any of the above methods of examination. It is in this class that irrigation is of much help. 4. The dangers of irrigation. A review of literature relative to dangers of irrigation. Report of a case of sudden unconsciousness following irrigation, with recovery. How to avoid the dangers associated with irrigation and yet retain diagnosis or treatment of maxillary sinus disease. 6. Treatment should be conservative. All cases should be given the benefit of a window resection with irrigation before more radical procedure is instituted. The Caldwell-Luck operation, when indicated, gives the best results, as it affords ample room for inspection and cleansing of the sinus at the time of operation, leaving a free opening into the nose for ventilation and after treatment.

Discussion opened by John J. Sullivan, Jr., Scranton, and Robert F. Ridpath, Philadelphia.

No. 16.

Diagnosis and Treatment of Vincent's Angina.
George R. S. Corson, Pottsville.

Outline. Brief review of history. Its prevalence. Importance of differential diagnosis. Bacteriology and treatment.

Discussion opened by Mathew S. Ersner, Philadelphia.

SECTION ON PEDIATRICS

BLUE ROOM.

Officers of Section

Chairman—J. Claxton Gittings, 1828 Pine St., Philadelphia.

Secretary—Robert K. Rewalt, First National Bank Bldg., Williamsport.

Executive Committee—William N. Bradley, Philadelphia; Henry J. Cartin, Johnstown; Henry T. Price, Pittsburgh.

Stenographer—Mr. T. F. Arnold, 335 Land Title Bldg., Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman: The Future of Pediatrics.
J. Claxton Gittings, Philadelphia.

No. 2.

Anemia in Children. D. Hartin Boyd, Pittsburgh.

Discussion opened by Frank A. Evans, Pittsburgh.

No. 3.

Practical Heliotherapy.
William G. Turnbull, Harrisburg.

Outline. Brief review of history and literature. Too much attention attached to theory and not enough to clinical results. History of four years' trial of Rollier system of heliotherapy with selected cases at Cresson Sanatorium. History of four years' trial of modified heliotherapy with all types of ambulatory cases.

No. 4.

X-Ray Studies of the Chest in Infants and Children. (Lantern demonstration.)
Henry K. Pancoast, Philadelphia

Outline. A widely different problem is presented in the examination of the chest of the infant and the child of several years of age. The appearances are quite different and the difficulties to be encountered in the examination vary considerably. The interpretation of findings must be based upon a thorough knowledge of normal appearances and variations within normal limits, especially in the appearance of roots and trunk shadows. The necessary technic will be discussed in each instance. Particular attention is to be given to the appearance of acute respiratory infections as they may alter the appearance of the lungs and the tracheobronchial lymph glands, to pneumonia, tuberculosis and all complications arising from these conditions. The question of thymic enlargements and tumors will be discussed also.

Discussion opened by Willis F. Manges, Philadelphia.

No. 5.

The Interrelationship Between the Health and Social Welfare of Children.
Ellen C. Potter, Harrisburg.

Discussion opened by Howard C. Carpenter, Philadelphia.

No. 6.

Jaundice of the Newborn.
Adam C. Williamson, Pittsburgh.

Outline. Jaundice of the newborn is probably a combination of liver function and blood destruction. There seems to exist a definite relationship between the iron content of placenta and the appearance of jaundice; as a definite iron level in the placenta is passed, jaundice appears. There is apparently no relationship as far as weight or maturity of fetus is concerned. The bilirubin in the fetal blood stream bears a definite relationship to the placental iron content and also is apparently quite independent of the maternal blood stream. Bilirubin may be present in sufficient amounts to disturb the infant Wassermann reaction giving an anticomplementary reaction when no clinical jaundice is present. The Van den Bergh reaction seems to point to the jaundice as being of a hemoptic type rather than hepatogenous.

Discussion opened by Henry T. Price and Percival J. Eaton, Pittsburgh.

Wednesday, October 3, 2 P. M.

No. 7.

Essentials of a Neurologic Examination in Children.
Frederick H. Leavitt, Philadelphia.

Outline. The majority of neurological conditions in children are a result of hereditary or congenital defects. During the period of infancy and early childhood the central nervous system undergoes marked growth and metamorphosis, and as a consequence, neurological signs and symptoms vary considerably in their significance and importance at different ages. The significance of the Babinski reaction in infants is a case in point. In a series of 100 newborn healthy infants examined at the Children's Hospital in Philadelphia, it was observed that about 50 per cent would give a positive Babinski reflex.

The purpose of this paper is to bring before the general practitioner and the pediatrician the essential signs and symptoms indicative of various neurological conditions and the importance that may be attached to them at the various stages in the development of the child.

No. 8.

Essentials of a Psychiatric Examination in Children.
Edward A. Strecker, Philadelphia.

Outline. Close relationship between pediatrics and neuropsychiatry. Similarity of problems and points of contact. Neuropsychiatrical conditions in children are strictly within the province of the pediatrist. Inadequacy of older methods. Accurate diagnosis depends on thorough and intensive examination. Scope of this examination—history, physical, neurological, mental, psychometric. As a result of these investigations certain major problems are delineated (mental deficiency, mental retardation, psychoses, psychoneuroses, epilepsy) and there remains a minor but important group including "nervousness," malbehaviour, precociousness, juvenile delinquency, etc. These major and minor diagnostic classes are arrived at most satisfactorily by diagnosis by exclusion. The mere placing of a child in one of these groups does not constitute a proper diagnosis. The diagnosis must often be manifold and include physical, neurological, psychiatric, psychometric, environmental and social factors. Illustrations: This kind of diagonsis is not an academic consideration, but a very practical one on which hinges successful treatment; therefore, all the causative factors must be apprehended. Minimum neuropsychiatric requirement for the modern pediatrist. His opportunity in the field of prevention (mental hygiene of childhood).

Discussion of both papers opened by Charles W. Burr and Edward A. Strecker, Philadelphia.

No. 9.

The Physician's Opportunity in the Prevention of Disease in Childhood.
Howard C. Carpenter, Philadelphia.

Outline. Preventive medicine applied to infancy and childhood in private practice and in hospitals. The training of the physician for this type of work and the equipment required. What results may be expected.

Discussion opened by William N. Bradley, Philadelphia.

No. 10.

The Rôle of Ultraviolet Rays in Rickets. (Lantern demonstration.) (20 minutes.)
Alfred F. Hess, New York City. (By invitation.)

Outline. Consideration of the radiations which are effective and those which are ineffective; of the various artificial sources of radiation that may be employed; of the effect of irradiation on the calcium and phosphorus of the blood; of the importance of sunshine in relation to rickets, and of the variation of the solar rays at different times of the year in various countries. The question of dietetic and climatic factors in their relation to rickets will also be considered.

Discussion opened by Henry T. Price, Pittsburgh.

No. 11.

Intradermal Vaccination.
Daniel E. Berney, Scranton.

Outline. Dilution of the vaccine. Method of intradermal injection. Necessity of having a perfectly dry needle in order to avoid external vaccination. Skin reaction at various periods following the procedure. Advantage of this method. Avoidance of mixed infections. No dressing required.

Discussion opened by Jesse L. Amshell, Pittsburgh. (Guest.)

No. 12.

Cystinuria. Report of Case.
Henry C. Flood, Pittsburgh.

Discussion opened by Roy R. Snowden, Pittsburgh.

Thursday, October 4, 9 A. M.

No. 13.

Acute Otitis Media and Mastoid Involvement.
James I. McLallen, Pittsburgh.

OUTLINE. 1. Anatomy of temporal bone in small children. 2. Etiology—(a) contagious diseases; (b) influenza with other infections; (c) adenoids. 3. Pathology. 4. Preventive treatment—(a) free drainage of middle ear, irrigation and rest in bed. 5. Operative treatment—(a) mastoidectomy.

Discussion opened by PERCIVAL J. EATON, Pittsburgh.

No. 14.

The Common Diseases of the Skin in Childhood. (Lantern demonstration.)

FRANK C. KNOWLES, Philadelphia.

OUTLINE. Scabies, pediculosis corporis, impetigo contagiosa, papular urticaria and the various types of ringworm.

Discussion opened by WILLIAM H. GUY, Pittsburgh.

No. 15.

Clinical Aspects of Congenital Syphilis. (By invitation.) (20 minutes.)

ROYAL S. HAYNES, New York City.

No. 16.

Mechanism of Infection, Immunity and Diagnostic Reactions in Congenital Syphilis.

JOHN A. KOLMER, Philadelphia.

Discussion of both papers opened by JAY F. SCHAMBERG, Philadelphia.

No. 17.

Mongolian Idiocy. Report of Two Cases in the Same Family. ZACCHEUS R. SCOTT, Pittsburgh.

OUTLINE. Theories advanced to explain cause of Mongolism. Frequency of Mongolism. Report of cases. A rare occurrence in the same family. Points of differential diagnosis, etc.

No. 18.

Tonsillectomies from the Standpoint of the Pediatrician. J. CLAXTON GITTINGS, Philadelphia.
A. GRAEME MITCHELL, Philadelphia.

OUTLINE. Preliminary report upon the study of 500 children upon whom tonsillectomy and adenoidectomy have been performed. Physical condition before and after operation with special reference to heart and kidneys.

PROGRAM OF CLINICS

TO BE HELD IN PITTSBURGH DURING THE MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, OCTOBER 1 AND 5, 1923

Monday, October 1st

9:00 A. M. to 1:00 P. M.

ALLEGHENY GENERAL HOSPITAL

Subject: Traumatic Head Surgery

Discussion and presentation of cases by:

Otto C. Gaub, M.D., of the Allegheny General Hospital.

Paul R. Seiber, M.D., of the Mercy Hospital.

E. W. Meredith, M.D., of the St. Francis Hospital.

L. H. Landon, M.D., of the West Penn Hospital.

E. W. Day, M.D., of the Eye and Ear Hospital.

Roentgenologist:

W. R. Ray, M.D., of the Allegheny General Hospital.

Neurologists:

W. H. Mayer, M.D., of the Allegheny General Hospital.

C. C. Wholey, M.D., of the West Penn and St. Francis Hospitals.

Max H. Weinberg, M.D., of the West Penn Hospital.

9:00 A. M. to 1:00 P. M.

MERCY HOSPITAL

Subject: Traumatic Surgery of Extremities

Discussion and presentation of cases by:

H. H. Donaldson, M.D., of the Mercy Hospital.

G. C. Weil, M.D., of the Mercy Hospital.

J. Huber Wagner, M.D., of the St. Francis Hospital.

R. H. McGuire, M.D., of the South Side Hospital.

G. F. Berg, M.D., of the St. John's Hospital.

R. J. Behan, M.D., of the St. Joseph's Hospital.

R. W. Entweisle, M.D., of the St. Margaret's Hospital.

M. C. Slocum, M.D., of the Pittsburgh Hospital.

John Alexander, M.D., of the Allegheny General Hospital.

2:00 P. M. to 4:00 P. M.

WEST PENN HOSPITAL

Subject: Goiter

Diagnosis of Goiter: R. T. Hood, M.D., of the West Penn Hospital.

The Mental and Nervous Symptoms in Goiter: W. K. Walker, M.D., of the West Penn Hospital.

Preoperative Care of the Toxic Goiter Patients: J. A. Lichty, of the Mercy Hospital.

Surgical Treatment of Goiter: Acheson Stewart, M.D., of the West Penn Hospital.

Operative and Postoperative Complications of Goiter Patients: Merle R. Hoon, of the Presbyterian Hospital.

Metabolism Tests with Goiter Patients: Frank Bailey, M.D., of the West Penn Hospital.

The Radiotherapy of Goiter: Geo. W. Grier, M.D., of the Passavant Hospital.

Evolution of Goiter as Seen in Western Pennsylvania: Jos. H. Barach, M.D., of the Presbyterian Hospital.

E. E. MAYER, Chairman;
MERLE R. HOON, Sub-Chairman.

MERCY HOSPITAL

9 A. M.-10 A. M.—Diseases of the Gall Bladder, Drs. Lichty and Fetter.

10 A. M.-11 A. M.—Diseases of the Kidney, Drs. MacLachlan and Pollack.

11 A. M.-12 Noon—Diseases of the Pleuræ, Drs. Moyer and Frost.

12 Noon-1 P. M.—Pernicious Anemia, Drs. Wright and Zur Horst.

Friday, October 5th

9:00 A. M. to 1:00 P. M.

MERCY HOSPITAL

Subject: Traumatic Surgery of Spinal Cord and Back

Discussion and presentation of cases by:

James O. Wallace, M.D., of the Mercy Hospital.

E. B. Fiske, M.D., of the West Penn Hospital.

W. H. Robinson, M.D., of the South Side Hospital.

Paul Steele, M.D., of the Allegheny General Hospital.

C. C. Yount, M.D., of the St. Francis Hospital.

J. P. Griffith, M.D., of the Mercy Hospital.

Edward McCague, M.D., of the Mercy Hospital.

G. W. Grier, M.D., of the St. John's and Presbyterian Hospitals.

Ralph Robinson, M.D., of the St. Francis Hospital.

John McCullough, M.D., of the St. Francis Hospital.

G. W. Wright, M.D., of the Mercy and St. Francis Hospitals.

G. W. Smeltz, M.D., of the St. Francis Hospital.

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLES

SOME FACTS IN REGARD TO THE X-RAY STUDY OF THE GASTRO-INTESTINAL TRACT*

BY G. C. McELFATRICK, M.D.

WILMINGTON, DELAWARE

In presenting this paper on rœntgenological studies of the gastro-intestinal tract, I hope to be able to show the value of this study in aiding and confirming the diagnosis rendered by the physician sending these cases.

Rœntgen ray study of the gastro-intestinal is not the last word in making the diagnosis of disease of the gastro-intestinal tract, and indeed to be of any value, it takes great pains, labor and skilled interpretation.

A certain number of both physicians and lay people have an idea that when you cannot find the cause of chronic ailment, all you have to do is to consult the x-ray department and they turn on some magic light, so that when a plate is taken of a certain organ, the name of the disease is printed in large letters, and your diagnosis is complete. But far from that!

The interpretation or study of the normal and pathological conditions that arise from the mouth to the rectum, puzzle the rœntgenologist as much as the man who referred the case. In any advanced pathological condition of any organ perhaps it is plain enough to make a diagnosis, but in the beginning and borderline cases, there is need for careful examination and study. In ulcer of the stomach for instance, you may be able to see your ulcer very well, but in others no evidence of the true ulcer is found. You have, then, your direct and indirect signs to guide you.

In your indirect signs, you have a hypermotility and hyperperistalsis and a rapid emptying of the stomach which is suggestive of an ulcer. But still you have no proof that you can show. Also other pathological conditions, as carcinoma, may give you this very same sign.

Great work has been done with the x-ray studies of the stomach and intestines, but they are in the hands of men who have every coöperation of the physician in charge of large hospital services, where internists and surgeons coöperate and help in making a positive diagnosis before operation.

But God help the rœntgenologist who has to go along and make interpretations without any history or help from the physician who refers the case. Many errors and wrong diagnoses, with bad results and operative findings will be contrary to the x-ray findings. But with good team work there should be nearly 100% diagnosis made with the x-ray study, which would correspond with the operative findings.

Over 50% of gastro-intestinal studies sent and examined in the past two years for stomach symptoms were found in either gall bladder or small or large intestines. It is surprising to see very few pathological conditions of the so-called stomach symptoms, and if the stomach were the only organ studied, in 50% of the cases reports and interpretations would be negative.

So that being the experience, it means that the stomach should not be the only organ x-rayed, but that we should go further, through the intestinal tract. We have found an old chronic posterior retrocecal appendix the cause of the stomach symptoms, kinked, long, narrow curled, adherent—veils, bands and adhesion in this region, all the cause of the stomach symptoms, though the patient was giving no other symptoms but pain, eructation of gas, heartburn, water brash, vomiting and nausea, which would lead you to consider the stomach surely, and these are the cases that you will fall down on in your correct diagnosis.

I hope to illustrate this 50% of trouble beyond the pylorus by lantern slides that I will show later and impress the fact that a study should be made of all the tract rather than of any one organ only.

Even if the x-ray findings are negative, there is no positive proof that the patient has no cause for his trouble. In a recent paper on "Physiologic Standards in Gastro-Enterology," by Dr. Horace W. Soper, New York, *American Medical Journal*, September 2, 1922, page 781, the author adds emphasis to the rôle that motor

* Read before the Medical Society of Delaware, Dover, October 9, 1922.

disturbances play in the production of gastro-intestinal symptomatology.

Most investigators agree with Carlson that the pain in gastric and duodenal ulcer is largely, if not entirely, due to motor phenomena, and in his paper he reports a large percentage of patients who presented themselves for treatment of constipation who in reality exhibited no colonic stasis but were suffering from the effects of the habitual use of cathartics and enemas. To restore normal function in these patients it was necessary only to permit the intact colonic mechanism to perform its work, unimpeded by drugs or enemas.

In another recent paper on "The Value and Limitations of Rœntgen Ray Diagnosis in Digestive Disease," by Dr. Ernest H. Gaither, Baltimore, the author outlines:

1st: Cases in which diagnosis could not be made without rœntgen ray.

2d: Cases in which the rœntgen ray is merely confirmatory.

3d: Cases in which the diagnosis cannot be made by the rœntgen ray, but can be made by a careful history and clinical investigation.

4th: Cases that have been incorrectly diagnosed by the rœntgen ray, as shown by their subsequent history.

In the discussion of this paper, Dr. R. Walter Mills, St. Louis, says gastro-intestinal rœntgen ray work is a highly skilled and difficult art so far attained by but a few who have had the advantage of large material. Rœntgen ray work can become so accurate as to be pernicious in its influence.

So you see teamwork should be the slogan in this work. At the Delaware Hospital the surgeons have coöperated with the x-ray department and notice is given that patients x-rayed for gastro-intestinal studies will be operated on such and such a date, and an invitation extended to the rœntgenologist to be present at the operation to confirm or disagree with his findings. In this way, errors can be seen and shown.

The purpose of this paper is not to discuss any particular disease of the gastro-intestinal tract, but to try to help in making an earlier diagnosis, so as to get the disease before it is inoperable, and also to determine definitely the location of the pathological lesion.

Diagnosis has been made of ulcer or carcinoma of the intestinal tract before x-ray study; but the rœntgen ray study will show the exact location of the disease (which gives the surgeon more light on what part he is going to operate), and also, from the appearance of the pathological condition or upon the involvement, whether it would be wise to operate or let it alone. So, therefore, I make a plea for an early study of any gastro-intestinal disturbance. Why treat a patient for a year for indigestion, gastritis, etc., and get no results, then have an x-ray taken and find gall-stones or kidney stones? These are the cases where the rœntgen ray findings are positive; and with the advanced technique and improved tubes and accessories, the rœntgen ray brings to light many obscure pathological conditions which would be overlooked otherwise.

Certainly a physician may know his patient has a fractured bone of the forearm, or an ulcer of the stomach, but to see this condition is impossible, and to see the same diagnosis confirmed by an x-ray plate reveals more than you have diagnosed. It gives the position and extent of the fracture, and gives the location of the ulcer.

Following this, fifty slides of diseases of the gastro-intestinal tract will be shown.

X-RAY OF THE URINARY TRACT*

BY IRA BURNS, M.D.

WILMINGTON, DELAWARE

It is unnecessary at the present day to discuss the obvious value and importance of the x-ray examination of the urinary tract. It is sufficient to state that it is the best and only single method of demonstrating the presence of calculus, also its location, its size and its shape, and of telling the number, if more than one are present. For this reason it is a very valuable aid in the decision whether operative procedure is necessary or an expectant course is permissible. In the latter event it is the only means at our disposal which tells us whether the calculus is passing down or remaining stationary, whether it increases in size, and whether there is a tendency towards the formation of additional calculi.

Besides establishing the presence or absence of calculi, the modern rœntgenologist should be equipped with a Potter-Buckey diaphragm, which is of the greatest mechanical assistance for giving us invaluable information as to the size, location and motility, if any, of the kidneys proper. This device, when proper technique is used, brings out soft parts, particularly the kidney, and also the bony structure of the spine and pelvis, with clear detail heretofore almost impossible to show satisfactorily. Particularly is this true in obese patients.

With kidney outline shown with such distinctness as it should now be shown it is reasonable to suppose that an exceedingly small percentage

* Read before the Medical Society of Delaware, Dover, October 9, 1922.

of calculi should escape detection. Some rœntgenologists use this device with almost every exposure.

For the diagnosis of movable kidney I believe the apparatus should be so arranged as to make radiographs of patients in a horizontal or perhaps moderate Trendelenburg position, and then in a standing position. With patient lying horizontally on the table, nephroptosis causing great distress, may be overlooked, just as the most marked gastroptosis will escape observation unless the patient is examined in a standing position.

I have adopted as a routine, in cases referred for size, shape and position of the kidney, of making an exposure with the patient in a horizontal position followed immediately, with my attachment so arranged as to tilt the table, and make one with patient in standing position. It occurred to me that this means of comparison would be the natural technique to obtain this information.

In the majority of cases x-rays are made of the urinary tract to determine the presence or absence of stones or to outline the size, shape and position of the kidney.

For other conditions of the kidneys, however, that cannot be determined readily or at all by such an examination, we may resort to the method of pyelography, that is the demonstration of the renal pelvis and calyces, of the ureter, and of the bladder, by the injection of substances that are opaque to the rays.

I have been exceedingly fortunate in having the coöperation of Dr. V. D. Washburn in this work, who cystoscoped and injected the patients in my office before I made the pyelograms. We believe that we were the first in this state, in October of last year, to make kidney studies by the method of pyelography. In the larger cities, however, particularly in the large clinics connected with teaching institutions, pyelography is almost a daily procedure.

Last week while visiting the rœntgenological work of various hospitals in New York City I was particularly impressed by the advanced urological work done in Mt. Sinai Hospital. Thursday they had twelve cases for x-ray of the urinary tract; many of these were catheterized and injected for pyelography. Their new addition has a sub-department of the x-ray section for urological studies alone.

The principal conditions which may be demonstrated by pyelography are: enlargement of the renal pelvis, such as hydronephrosis and pyonephrosis; malformations of the renal pelvis, most commonly due to tumor of the kidney; cystic kidney, horseshoe kidney, fused kidney; identification of shadows within the kidney outline as extrarenal or intrarenal, constriction or kink in the ureter. Our first case was a stricture of the ureter, which Dr. Washburn advises me was relieved of his symptoms after dilatation.

We not unusually find the origin of some obscure or vague complaint in the urinary tract—perhaps a small calculus in the kidney or ureter previously unsuspected, or possibly a movable kidney kinking the ureter. Urologists of considerable authority claim that ureteral kink is probably one of the most frequent causes of abdominal pain.

Also it has been my experience in cases where the patient's vague complaint suggested disease of the urinary tract that sometimes the pathology was elsewhere. One such case was referred by Dr. J. S. Keyser, of a young woman whose symptoms suggested a kidney or hip joint disease. My exposure, fortunately, covered also the lower lumbar vertebræ, and to our surprise, considerable destruction was found about the fourth and fifth lumbar vertebræ. My diagnosis, of spondylitis, probably of mixed infection, was confirmed by the subsequent history and arrest of the condition.

A similar case was referred by Dr. F. E. Spencer, whose indefinite symptoms suggested some kidney pathology. Dr. Washburn brought the case to my office with the intention of injecting the kidney for pyelograms. Before inserting the catheters, however, I made radiographs and they revealed spondylitis deformans almost identical with that shown in Dr. Keyser's case. This patient's condition also was arrested and all symptoms disappeared with immobilization in a plaster jacket.

The first two slides I shall show are those of normal renal pelves and calyces showing a few different types within perfectly normal limits, just as we have different types of stomachs, etc.

The first case we studied was a male aged 33. The left catheter was readily inserted and passed to the pelvis of the kidney but this could not be done on the right side on account of what proved to be a stricture in the ureter near its entrance to the bladder. The opaque fluid, however, was readily passed up both ureters and filled the pelves and calyces. This fluid was then permitted to flow from each ureter simultaneously. The normal ureter permitted the return flow readily, but the constricted side retarded the flow. The second slide of this case shows the fluid remaining in the pelvis of this kidney while the other is clear of the fluid.

I shall also show slides made of some of my cases with renal and vesical calculi. Also one showing the sodium iodid solution, which was

used in making our pyelographies, injecting a perineal-prostatic fistula.

REFERENCES

Pyelography, W. F. Braasch, M.D.
U. S. Army X-Ray Manual.

DISCUSSION

ON PAPERS OF DRS. MCELFATRICK AND BURNS

Dr. Ira Burns (Wilmington): With reference to Dr. McElfatrick's paper, his pictures are exceptionally good, particularly those of the appendix. With reference to diagnosis, just as Dr. McElfatrick said, the rœntgenologist's diagnosis is not at all final. We hope to make it more and more correct as time goes by. There are some rœntgenologists whose diagnosis is the last word, but there are exceedingly few men who are so capable.

Dr. Wm. V. Marshall (Wilmington): I should like to say a word about physicians being under the impression that just one plate is sufficient to make a diagnosis. It is pretty hard at times to have the patient submit to more. I think our studies here to-night prove to us that oftentimes several x-rays are necessary, so when you send your patients hereafter, do not limit them as to the number of plates unless you have to.

Dr. H. W. Briggs (Wilmington): I wish to emphasize one point brought out by Dr. McElfatrick, that is, the necessity of coöperation, in other words, of team work. In our work at the Delaware Hospital, we do not rely upon one definite thing. No diagnosis is correct until we have a complete report from the x-ray department, from the laboratory, and a complete history of the patient, together with clinical findings on examination. He is perfectly right in saying that more advantage should be given him, and that we should not depend on any rœntgenologist's findings.

Dr. Harold Springer (Wilmington): I want to congratulate these men on their pictures. I am glad to see that they bring out two or three points. Do not depend on the x-ray man and his diagnosis alone. We can be very easily misled, and this is true more positively about abdominal pictures, especially as far as the stomach is concerned.

I believe that a great many people have stomachs low down. This condition that we call chronic appendicitis is not chronic appendicitis—it is adhesions. If you send a patient to a laboratory man, he will show it is chronic appendicitis. In most cases, there is nothing wrong with the appendix, it is tied down with adhesions. I believe that in the large majority of cases of gall-bladder diseases you can find some definite pathology in the right lower quadrant. It is surprising in how many cases you can demonstrate an actual pathological condition about the appendix or the lower end of the ascending colon that produces symptoms which are labeled "fallen stomach." The x-ray study is only one link in the chain, and it is not the most important link.

I want to urge on the medical man in making his diagnosis that he keep these things in mind, and not forget that the average stomach case is not a stomach case. In 1,000 cases of indigestion, 66% were associated with kidney diseases. Out of 1,000 only 11% can be traced to stomach conditions themselves, such as ulcers, cancers, etc. I think that a conservative estimate would be one in twenty where you would get a gall-stone picture by an x-ray. Also I wish to emphasize that there are some cases of so-called "acute indigestion" which are gall-bladder trouble, rather than trouble in the stomach itself. There is another thing that we should remember in gall-stones—the rarity of jaundice. I should not like to say what per cent of gall-stones do not have jaundice.

Dr. J. M. Stadter (Wilmington): During the past year in New York City, the cases which were diagnosed as chronic appendicitis were not operated on before x-ray examinations were made.

Dr. McElfatrick (in closing): We make as many correct diagnoses as we do in general practice, if not more. The idea is that we feel we are a help in locating the disease. One thing I should like to say is this: As Dr. Marshall says, a good many physicians think that one plate is sufficient to tell you everything from mouth to anus. Doctors down state send their patients for gastro-intestinal examinations, and they come to my office expecting to get the afternoon Delaware Road train back home. Remember it takes from two to three days to make a complete, thorough examination of the intestinal tract, and the x-ray man cannot do it for five dollars.

EDITORIALS

WHAT WILL THEY DO?

This question is now on the lips of every physician in Delaware, and refers to the newly appointed Commission of Public Health and Welfare. This Commission was appointed recently by Governor Denny, pursuant to the Act of the Legislature of 1923, which provided for the amalgamation of the Child Welfare Commission, the State Tuberculosis Commission,

and the State Board of Health. The story of the battle over this bill is well known. It began some two years before, when it became apparent that the Child Welfare Commission, under the guidance of Dr. French and certain feminist leaders, showed by its actions that it either could not or would not conduct its activities in fairness to the medical profession. The evils grew and grew, till nearly every physician in the state had one or more grievances against the movement; in fact they grew to such a volume that the most ardent apologist for the Commission realized that some changes were inevitable, and soon at that. Sick children were being treated, instead of being referred to their family physician; the bill for drugs in one year was five hundred dollars; patients were admitted regardless of their financial status, simply to increase the number of persons treated and thereby justify an increased appropriation; their nurses were playing favorites and referring cases to those favorites; and worst of all, prescriptions are on file in certain pharmacies written by welfare nurses. When these and other matters were complained of, all that the physicians got from the Commission or its employees were acknowledgments of wrongdoing, and promises for the future. These promises were never fulfilled. The removal of Dr. French did not remedy matters much. Even the laiety began to squirm under some of the antics of the Commission, as was manifested during the Legislature. We did not know till that time just how unpopular this Commission really was. As an example, in the House Mr. Gray had secured twenty votes out of thirty-five to wipe out the Commission entirely. Thus there was good reason to make some change in this work. The tuberculosis work was included in the merger as a matter of financial economy.

Realizing the hopelessness of any reform coming from within the Commission, the Medical Society of Delaware and its constituent societies prepared to take their case to the Legislature. Learning of this, the Commission, together with some other commissions, prepared a bill of their own, and it likewise was presented to the Legislature. Both bills provided for the fusion of the three above-named boards, but differed widely in their medical provisions. The bill as actually signed is a compromise bill, but by a very narrow margin grants the most vital point involved to the physicians, i. e., it provides that the medical profession shall control the medical affairs of the state. This control hangs by a very slender thread, and necessitates the attendance of all four physicians at every meeting, a practically impossible feat, whether the meetings are held in Dover or in Wilmington.

The new Commission consists of one physician from Wilmington, one from each of the three counties, and three lay women, one representing the old child welfare work, one the old tuberculosis work, and one at large. The personnel of the lay section of the Commission had been rather accurately predicted some time before the appointments were announced; the medical personnel was somewhat of a surprise. Some weeks before, Governor Denny requested the medical societies to make nominations for these posts, but so far as we are informed at present, none of those nominated to represent the organized profession were named. We venture the opinion that the Governor would not ignore the nominations of organized labor, or organized suffrage, or any other organization that has an especial right to speak for its constituency. The Governor has given the profession, as an organization, a slap in the face; but he may regret it some day, for should he ever seek other political honors in Delaware, he has been marked already for a thorough knifing, regardless of party. And this is in addition to the animosity engendered by the unsavory Denny-Wolcott-duPont deal.

The medical personnel as actually named has been greeted with mixed approval and disapproval, because of the fact that two of the four physicians named have been more or less actively associated with the child welfare work before. It is unquestionably true that the Governor set out to nullify the intent of the law to grant to medical men the control of the various state medical boards, by appointing the three women required by law, and then adding to their votes two physicians who presumably would play the game with them rather than with the physicians. But judging from the statements made by these two, it is already apparent that they are looking at the question from a much larger viewpoint than that of one bureau only. They seem to realize that they are now responsible for the purely medical work of the whole state government, and as such cannot for one minute play into the hands of any lay group. No vote cast by them can be cast conscientiously unless it be backed up by their whole experience as medical persons. We are personally convinced that, when it comes to the inevitable showdown, these doctors will vote as doctors, and not as partisans to any lay movement, however worthy. We are sure that the entire medical section of the new Commission will function to the satisfaction of the profession. They have many intricate problems to face, many

old sores to heal, and many opportunities also. May they make the most of them.

The Commission will determine the policies of the department, and the actual carrying out of these will devolve upon the executive secretary, who, by law, must be a trained sanitarian. There is no such individual in the state at present, though there are several who have had considerable experience in military sanitation. This type of experience may prove sufficient for our local needs, but the law makes it mandatory, and we think rather wisely, that the secretary be a man trained especially in this kind of work. This means that a man will have to be imported, and already we have heard complaints that the local profession is to be ignored in seeking after the proper official. Such complaints are not worthy of our profession. Delaware is a small state, and sometimes stoops to small things, and the people of Delaware exhibit at times a most deplorable provincialism, a smug self-satisfaction that stifles progress; but surely the doctors of Delaware are big enough and broad enough to see that, even though the law did not compel it, the best is none too good for this very important post. The new incumbent *must* possess this special education, which is tantamount to saying that he must possess the degree of doctor of public health. He will almost surely be also a doctor of medicine, for none of the schools of hygiene with which we are familiar admit any but graduates in medicine. This will assure a more sympathetic attitude towards the profession, and we feel sure will go a long way towards eradicating the sore spots that have been engendered in the past. The work of the new Commission will largely stand or fall according to the ability, tact and common sense of the executive secretary.

But the Commission itself will have to stand or fall according to the policies it adopts. It seems anticipatory to make suggestions to them, but as the mouth-piece of the organized profession we implore them to see to it that the evils of the past be avoided, that causes of irritation be removed, that medical problems be solved by medical persons. There was plenty of room for improvement in all three of the bureaus merged; we expect to see these improvements made. We realize that the economy of $100,000 talked about during the Legislature may not be possible, and we realize that with the decreased appropriations available the work starts out handicapped, but intelligence, industry, and integrity will go a long way towards wiping out this handicap.

Delaware expects this Commission to do things, and to do them right. W. E. B.

THE NEW COMMISSION OF HEALTH AND PUBLIC WELFARE

We are not altogether pleased with the way the Governor disregarded the selections of our Medical Society, and we are disappointed in not having on the Commission members of our choice, but all in all, the Governor did well in his appointments.

The predominant influence on the Commission will be the Child Welfare, represented as it is by Mrs. Charles Warner, Dr. Robert E. Ellegood and Dr. Margaret Handy. The obvious inference is that the policies, and to a very large extent, the practices of the old Child Welfare Commission will be carried on.

Child welfare work is here to stay and it behooves us to make this stay profitable to the community. This can be best accomplished by adjusting ourselves to this welfare movement and giving the Commission our whole-hearted coöperation. Captious criticism, petty antagonism and hair-splitting arguments will only belittle the profession, and create bitterness and personal animosities which will hamper the work, and to that extent waste public funds.

The new Commission has a big job on its hands. The activities of the old Tuberculosis Commission, the Child Welfare Commission, and the State Board of Health will be correlated in such a way as to render the work more efficient and economical, to fulfill the object of the merger. It will depend to a great extent on the kind of executive secretary the Commission will select. Delaware is a small state and has very little money to spend, and that little must go a long way. Let us all work together to make the activities of the new Commission as efficient as they can possibly be made. A. R.

PERSONALS

Dr. J. Keyser, of Wilmington, is leaving for Europe for an indefinite stay, to take up obstetrics and gynecology. He will spend most of his time in Berlin and Vienna.

Dr. William H. Speer is now in Europe on a six-weeks' vacation.

BOOKS RECEIVED

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. New York: William Wood and Company. Price $5.00 net.

The Infant and Young Child. Its Care and Feeding from Birth Until School Age. A Manual for Mothers. By John Lovett Morse, M.D., Edwin T. Wyman, M.D., and Louis Webb Hill, M.D., of Harvard Medical School and Children's Hospital, Boston. 12mo of 271 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $1.75 net.

Eleventh Annual Report of the United Fruit Company, Medical Department, 1922. General Offices: Boston, Massachusetts.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Volume II. Thirty-third series, 1923. Philadelphia and London: J. B. Lippincott Company.

Teeth, Diet and Health. By Kurt H. Thoma, D.M.D., Assistant Professor of Oral Pathology in Harvard University Dental School. 12mo, 215 pages, illustrated. The Century Co., 353 Fourth Ave., New York City. Price $2.00.

Ceremony of Unveiling of the Memorial to the Service Men of the Allegheny County Medical Society, Thanksgiving Morning, November 30, 1922, at eleven o'clock, Schenley Pork, at Phipps Conservatory, Pittsburgh, Pa.

1922 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1,394 pages, 488 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $13.00 net.

Infection and Resistance. An exposition of the biological phenomena underlying the occurrence of infection and the recovery of the animal body from infecticus disease, with a consideration of the principles underlying specific diagnosis and therapeutic measures. By Hans Zinsser, M.D., Professor of Bacteriology and Immunity, Medical School, Harvard University. Third edition. New York: The Macmillan Company, 1923.

BOOK REVIEWS

THE DEBT OF MEDICINE TO THE FINE ARTS, by J. A. Nixon, M.D., F.R.C.P., Bristol, England. Publisher: J. W. Arrowsmith, Ltd., 11 Quay St., Bristol, England. Price 75c net.

This little brochure represents The Presidential Address, delivered at the opening of the Fiftieth Session of the Bristol Medico-Chirurgical Society, October 11, 1922.

Dr. Nixon sustains his argument in logical sequence, proving that the medical profession has been debtor to the fine arts for many centuries. Several prints of anatomical plates, the earliest being 1452-1519, illustrate the Doctor's thesis.

Dr. Leroy Crummer, of Omaha, Nebraska, recently addressed The College of Physicians of Philadelphia on "Early Anatomical Fugitive Sheets," and is now in Italy making further studies along the same line as Dr. Nixon.

To those who are interested in the subject we recommend the brochure as being directly informative and suggestive of lines for further study of this interesting subject. A. C. M.

THE PATIENT'S VIEWPOINT. By Poluel J. Flagg, M.D. The Bruce Publishing Co., Milwaukee, Wisconsin. Price $1.30.

This is an interesting little volume, not because of its merits from an educational point of view, but because it reflects the thoughts, emotions and personality of its author, a physician. It is like spending an evening or two with the doctor and hearing him talk in a personal way about the various perplexing problems encountered during his long professional life. There is little of the "Patient's Viewpoint" in the book, save in a few snatches here and there, but the "Author's Viewpoint" is interesting, even if one does not agree with his theology, or disapproves of the childish fashion in which he handles the theory of evolution.

The chapters "Incense to Mercury," "General Practitioner and Specialist" and "The Physician and the Nurse" are particularly good and show a thorough familiarity with hospital life. We would like to quote extensively from these chapters, but we rather recommend the reading of the book, particularly the very vivid and humane description of the poor children who are having tonsillectomies performed in groups.

Throughout the volume there is a lofty idealism which is refreshing in these days of crass commercialism in the profession. Here and there a touch of fine description and insight into human emotions stamp the author as a writer of no mean ability.

We would like to have the full story of Helen Stiles—it must be interesting. A. R.

CLINICAL ELECTROCARDIOGRAPHY, by Frederick A. Willius, M.D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. Octavo of 188 pages with 185 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

For those of us who were reared on Lewis' small electrocardiographic primer, there seems little need for the recent flock of booklets which have appeared on the same or kindred subjects. Few new ideas of assured fact are generally added in these works and the old material is usually redone. Of course, we appreciate that publishing houses must prosper and that none of us are guiltless of "pot boiling."

The author of the book in question has done some very admirable work on the clinical side of electrocardiography. The essence of his articles on angina pectoris, T-wave, negativity, prognosis from the electrocardiographic standpoint, etc., is included in this book. We have read with intense interest his contributions to the journal literature as they have appeared, and they merit our heartiest congratulations. They are worth while. Why they need the additional medium of a book for dissemination, we can only surmise.

We see no advantage in changing the classification of abnormal cardiac mechanisms, in spite of the arguments presented. Perhaps we do not like iconoclasts. The author could not well expect a beginner to operate an electrocardiograph by following the included directions. Perhaps he has no idea that they could serve the beginner in this way. Then too, we have recently seen such excellent electrocardiograms, from the technical standpoint, appearing in the literature, that we cannot compliment the author on some of his curves as the printer has reproduced them. They are, nevertheless, an interesting group of tracings, even though some of them are susceptible of interpretations other than those set down for them, and some of them are undoubtedly by oversight incorrectly legended. These criticisms are, by no means, destructive. We doubt whether anyone else attempting a book on similar lines could do better. The author's own contributions to electrocardiographic literature are most noteworthy. He has worked with a wealth of material and he has utilized it to splendid advantage. T. G. S.

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. A Layman's Handbook of Treatment. By Lawrason Brown, M.D. Fourth Edition, Thoroughly Revised. Lea and Febiger, Philadelphia and New York. Price $1.50.

There is no other chronic disease in which the outcome of the treatment depends so much on the absolute coöperation of the patient as is the case with tuberculosis, and this coöperation cannot be secured unless the patient has a thorough understanding of his disease and what is expected of him. He must, for a time at least, recast his whole life and adjust himself to a regimen requiring an unusual degree of self-

discipline. The physician has not the time, and in many instances the knowledge, to instruct his tuberculous patient, and he can do no better than place one of these little books in his patient's hands, with the admonition to study it carefully.

The author, a disciple of the great Trudeau and a foremost specialist, who has himself gone through the fight, has presented in a tense and lucid manner the known facts about the management of tuberculosis, and the reason for the rules to be observed. The treatment of tuberculosis has undergone a decided change within the last few years. Where the emphasis used to be placed on forced feeding and fresh air, rest is now regarded as the most essential factor. As Dr. Brown points out, rest, good food, fresh air and education are the Alpha and Omega of modern treatment. Yet, in the experience of those who have to deal with a large number of consumptives there is still another important factor which determines to a large extent the ultimate issue, namely, the patient's psyche. His mental attitude towards his illness; the extent to which he succeeds in making his family, social and economic adjustments; the control which he must exercise in changing fixed habits; his ability to suppress desires and urges without creating serious conflicts; the difficulties frequently introduced into the situation by peculiarities of temperament—all these factors creep in and render the management of the given case extremely difficult. How often does one see the grouchy, dissatisfied, restless, impatient consumptive succumb to the disease, despite the best medical treatment. This is the individual who changes physicians, goes from one sanatorium to another, makes long pilgrimages to "climates"; in short, "chases the cure," only to find grim death waiting at the end of the chase. Of these and to these, Dr. Brown cay say a great deal, and we hope he will do so in the next edition of his handbook.

It is to be equally regretted that the author passes over with contemptuous silence the use of drugs in the treatment of tuberculosis. It is true that the book is written for laymen, and there is always the danger of self-medication; it is equally true that there are practically no drugs which are more than "placebos" in the treatment of consumption. Yet, even the intelligent layman still clings to the belief in the efficacy of drugs, and he will regard with distrust a physician who does not prescribe "something." It would help the conscientious physician a good deal if a book of this type contained the reasons for our apparent therapeutic "nihilism" when it concerns the treatment of tuberculosis. In this connection, a brief discussion of the patent medicines and other fake consumption cures would not be amiss.

However, it is merely a difference of opinion as to what should be included in a book for laymen. The reviewer does not wish to create the impression that the omissions mentioned detract seriously from the value of the book, particularly since an exceptionally good bibliography is appended and thus opportunity afforded to gain the information elsewhere. A. R.

LEGAL MEDICINE AND TOXICOLOGY. By many specialists. Edited by Frederick Peterson, M.D., Manager Craig Colony for Epileptics; Walter S. Haines, M.D., late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College; and Ralph W. Webster, M.D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second Edition. Two octavo volumes, totalling 2268 pages, with 334 illustrations, including 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $20.00 net.

Every article of the former edition has been thoroughly revised or entirely rewritten and brought up to the present-day knowledge of the subject treated. The group of authors who have contributed to this excellent work are leaders in the subjects on which they have so skillfully written.

The work is divided for convenience of reference into two sections, Part I and Part II, the latter being devoted to Toxicology and other portions to Legal Medicine in which laboratory investigation is an essential feature.

The first volume is divided into 33 chapters, contains 1196 pages. The subjects treated are Legal Rights and Obligations of Physicians; Identification of the Living; Identity; The Signs of Death; Sudden Death; Death from Cold, Heat and Starvation; Death and Injuries by Lightning and Electricity; Wounds; Gunshot Wounds; Burns and Scalds; Railway Injuries; Injuries and Disorders of the Nervous System Following Railway and Allied Accidents; Speech Disorders; Inebriety; The Stigmata or Degeneration; Mental Disorders in Medicolegal Relations; Mental Defect Group; Mental Perversions of the Sexual Instinct; Malingering and the Feigned Disorders; Summaries of State Laws Relating to the Insane; The Legal Aspects of Pregnancy; Legitimacy—The Determination of Sex-Signs of Delivery; Birth and Legitimacy; Abortion; Infanticide; Impotence and Sterility; Rape; Unnatural Sexual Offenses; Marriage and Divorce; The Medicolegal Aspects of Vision and Audition; The Medicolegal Relations of Venereal and Genito-Urinary Disorders; The Medical Jurisprudence of Life Insurance; The Medical Jurisprudence of Accident Insurance.

All of these articles have been well written and convey to you in a clear manner the essentials of the subject under consideration. The subjects are those with which the average physician should be more familiar and the clearness of the text will appeal to the average physician.

Volume II, as previously stated, is devoted to Toxicology. It treats of the following subjects: General Principles of Toxicology; Forensic Questions Relative to Poisoning; The Technic of Medicolegal Postmortem Examinations; Inorganic Poisons; Gaseous Poisons; Death from Asphyxia; Alkaloidal Poisons; Non-Alkaloidal Organic Poisons; Industrial Toxicology; Food Poisoning and Food-Borne Infections; Poisonous Mushrooms; Poisonous Proteins; Postmortem Imbibition of Poisons: The Destruction and Attempted Destruction of the Human Body by Fire and Chemicals; Death from Pounded Glass and Other Mechanical Irritants; Medicolegal Examination of Blood and Blood-Stains: Medicolegal Examination of Seminal Stains; Medicolegal Examination of Hairs; Medicolegal Relations of the X-Rays, Redium and Ultra-Violet Rays; The Common Law and Statutory Obligations of Pharmacists.

This volume contains a mass of valuable information which is of help not only to the specialist but to the general practitioner and student. Furthermore, this work has been produced by men who are likewise experts in their lines and is written in as attractive a manner as it is possible to present these difficult subjects.

The reviewer congratulates the authors and their associates on the publication of these two extremely well prepared volumes. F. F. D. R.

PROPAGANDA FOR REFORM

THE INTRACARDIAC INJECTION OF EPINEPHRIN.—Recently much publicity has been given to the power of epinephrin, when injected into the heart, to produce a response resulting in revivification when the heart has apparently ceased its action from certain causes. Of the many cases which have been reported, a remarkable one is that in which collapse occurred during an examination for extra-uterine pregnancy. After other methods had been tried withaut avail, an intracardiac injection of epinephrin was given. In ten seconds the heart sounds became perceptible. Four weeks later the patient was discharged as well. It must be borne in mind that the instances in which such restoration can be utilized are rare. When death comes as the result of the wearing away of tissues, as the result of toxic

action of either bacterial or metallic poisons, or as the result of destruction of vital organs, it would be cruel and futile to arouse false hopes by what could only be a sensational experiment. (*Jour. A. M. A.*, May 5, 1923, p. 1314.)

Intravenous Therapy.—For some years the Council on Pharmacy and Chemistry has urged conservatism in the adoption of the intravenous method of administering drugs. It has been necessary to do this to offset the propaganda of proprietary firms that, for commercial purposes, feature the indiscriminate use of intravenous therapy. In order that the status of this form of drug administration might be presented to the profession, and that it might be made clear under just what conditions the intravenous administration of drugs is warranted, the Council publishes a report prepared by a committee which studied the problems involved. The report discusses the fallacy of the arguments commonly advanced by those who advocate intravenous therapy as a routine. The Council has no desire to discredit the rational use of drugs by intravenous injection, but, on the contrary, it seeks to avoid the accidents and disappointments that must follow the abuse of a method which, rightly employed, may be a life-saving measure. The Council places itself on record as opposing the reckless and indiscriminate use of drugs by intravenous injection with its attendant dangers and increased needless expense to the patient. However, the Council recognizes the legitimate, life-saving nature of the intravenous administration of drugs in extreme cases. (*Jour. A. M. A.*, May 5, 1923, p. 1331.)

Ethylene and Acetylene.—There is a revival of interest in two gas anesthetics: ethylene and acetylene. Both gases were the subject of experiment in anesthesia many years ago. The studies of A. B. Luckhardt and J. B. Carter and of W. E. Brown with ethylene confirm the earlier experiences and hold out promise of the usefulness of the gas. In the recent experiments with acetylene the objectionable odor of the gas has been overcome by the addition of oil of pine. A mixture of acetylene, 40 parts, and oxygen, 60 parts, flavored with oil of pine, has been used in major operations. The advantages claimed for acetylene are: rapid induction; simplicity of administration; safety; absence of struggling and excitement, and rapid recovery. Both ethylene and acetylene are asphyxiants. Their usefulness in relation to that of nitrous oxid, and also to ether, remains to be demonstrated. (*Jour. A. M. A.*, May 12, 1923, p. 1383.)

Fleischmann's Yeast Not Admitted to N. N. R.—In March, 1921, the Council on Pharmacy and Chemistry took up the consideration of Fleischmann's Yeast on account of the extensive and extreme therapeutic claims which were made for this preparation. Since then the Council has given much attention to the subject of yeast therapy. After consulting with eminent students of nutrition and clinicians qualified to speak with authority on questions of nutrition, dietotherapy and pediatrics, the Council concluded that there was little likelihood that the administration of yeast or yeast preparations will be of therapeutic value in many cases for which they are advised. The Council finds that many advertisements for Fleischmann's Yeast are misleading in that they tend to create the belief that many diseases are prevented or cured by its use. Advertisements addressed to physicians are likely to lead to the belief that the efficacy of yeast therapy in many conditions has been established. Advertisements addressed to the public are bound to create the opinion in the mind of the lay reader that reliance may be placed on yeast in many conditions. The Council refused recognition to Fleischmann's Yeast (1) because it is advertised by means of unwarranted and misleading therapeutic claims, and (2) because it is advertised to the public with unwarranted therapeutic claims that may become a detriment to the public health. (*Jour. A. M. A.*, May 12, 1923, p. 1398.)

The Standardization of Pituitary Extract.—Pituitary extract—a solution containing the water soluble principle or principles from the fresh posterior lobe of the pituitary body of cattle—is official in the U. S. Pharmacopeia as Solution of Hypophysis, and a method of standardization is prescribed. In practice the pharmacopeial standard has been found unreliable and manufacturers have adopted various modifications. Further, the pharmacopeial solution has been found too weak, and stronger preparations are being marketed. Some of these have been accepted for *New and Nonofficial Remedies*. The wide variation in the strength of pituitary extracts and the unsatisfactory character of pharmacopeial assay method are shown in a study carried out by Erwin E. Nelson, and a study by Morris I. Smith and Wm. D. McKlosky. The next pharmacopeia should provide a pituitary solution of satisfactory strength and an assay method which will insure a satisfactory control of this important medicament. Until such a standardization is provided, the physician will do well to use one of the pituitary preparations accepted for *New and Nonofficial Remedies*, which he has found to be satisfactory. (*Jour. A. M. A.*, May 19, 1923, p. 1473.)

Tryparsamide.—The Council on Pharmacy and Chemistry publishes a preliminary report on the experimental status of Tryparsamide. The drug is an arsenical developed in the Rockefeller Institute for Medical Research. Pending the outcome of clinical studies, the substance is not offered for sale. Tryparsamide is primarily a trypanocidal agent, but it possesses some spirocheticidal activity. It is said to produce "tonic" effects. It is proposed for use in the treatment of trypanosomiasis, syphilis of the central nervous system and late stages of syphilis with inactive or indolent lesions, and it is said to be specially indicated in the treatment of cachectic individuals. The Council states that the favorable reports of the effect of Tryparsamide on trypanosomiasis and neurosyphilis appear to warrant controlled trials of the drug in these conditions, but also warns that the possibility of harm to vision must be given due consideration. The Council postponed the acceptance of Tryparsamide for *New and Nonofficial Remedies* until its therapeutic value and safety are established, and until it is on the market. (*Jour. A. M. A.*, May 26, 1923, p. 1521.)

Fibroform and the Nolan Inhaler.—"A cure for pulmonary tuberculosis by the use of pure carbon and calcium was claimed by Dr. Wm. T. Nolan of Jeannette, Pa., in an address before the Westmoreland County Medical Society in Greensburg, Pa." This was the first paragraph of a news story sent out by the Associated Press. The treatment, it seems, consists of the inhalation of a fine powder said to be made by mixing soot with calcium carbonate, phosphate, chloride and lactate. This, Dr. Nolan calls "Fibroform." Fibroform is used by means of the Nolan Inhaler. The outfit appears to be supplied by Dr. Nolan for one hundred dollars. As no quantities are given, the composition of this latest "consumption cure" is secret. The treatment is put forward on the basis of utterly inadequate tests made only by its sponsor. (*Jour. A. M. A.*, May 26, 1923, p. 1535.)

AFSAL.—Afsal is being marketed by S. Lewis Summers. It is stated to be "diacetyl methylene disalicylic acid." The product was formerly marketed by the Organic Chemical Manufacturing Co. (S. Lewis Summers, president) as Urasol. Urasol was one of a number of the "Forma-Sol Compounds" marketed by the Organic Chemical Manufacturing Company and stated to be compounds of methylene-disalicylic acid. Sollmann reported in 1908 in an investigation made for the Council on Pharmacy and Chemistry that he had been unable to confirm the claims that were made for these compounds. A subsequent examination confirmed Sollmann's findings. (*Jour. A. M. A.,* Sept. 7, 1922, p. 1264.)

SPAHLINGER'S TREATMENT FOR TUBERCULOSIS.—Spahlinger, according to reports, was a lawyer who abandoned his profession for research work. He appears now to be connected with the Bacterio-Therapeutic Institute, Geneva. According to an article by Spahlinger, the treatment utilized either one or both of two therapeutic principles depending on the nature of the infection. In acute cases, passive immunization with special serums is used. In chronic afebrile pulmonary cases, in non-pulmonary, and in cases "predisposed to" tuberculosis, active immunization with special antigens is employed. No definite information in regard to the preparation of the product is given. Reports that the British Red Cross is to purchase the treatment are unconfirmed. Reports that the Rockefeller Institute had made an offer to secure the rights for the product in the U. S. proved unfounded. The exact nature of the Spahlinger treatment does not appear to have been divulged, the treatment is in the experimental stage and the reported results lack confirmation. (*Jour. A. M. A.*, Oct. 7, 1923, p. 1264.)

RADIOACTIVITY OF WATERS.—Twenty-five years ago various mineral springs and waters were claimed to have therapeutic virtues because of their lithium content. To-day we know that the amount of lithium in natural waters is insignificant, and that lithium is of no therapeutic value anyway. At the present time, many mineral waters are exploited because of their asserted content of radium. However, the rationale of the internal administration of radium is being doubted. Also, relative traces of radioactive substances are practically valueless and the Council on Pharmacy and Chemistry will not accept any radium solution for internal use the dosage of which is less than two micrograms each day or any radium emanation generator which yields less than two microcuries emanation each twenty-four hours. The probable value of radioactive mineral waters may be judged when it is known that it would be necessary to consume 2,810 gallons daily of the water yielding the largest quantity of temporary radioactivity in order to obtain the minimum therapeutic dose of two microcuries emanation and that the best water available as regards radium content would require the administration of 1,957 gallons per day in order to obtain 2 micrograms of radium. (*Jour. A. M. A.,* Oct. 14, 1922, p. 1339.)

THE CLINICAL FIELD OF YEAST PREPARATIONS.—In March, 1921, the Council on Pharmacy and Chemistry requested its Committee on Therapeutic Research to determine the advisability of undertaking a clinical study of the usefulness in therapy of yeast preparations. Accordingly the chairman of that committee drew up a provisional plan which proposed to utilize the easily observable phenomena of growth, appetite and laxative effect as cumulative indices of all actions and to record this under a variety of normal and pathologic conditions. The plan was submitted to the committee and to others for an opinion. In consideration of the replies received and the unfavorable results published by A. L. Daniels and by A. F. Hess the chairman of the committee recommended that the study be not inaugurated. The chairman reported that he had come to these conclusions: 1. Apart from the occasional imported cases of beriberi, vitamin deficiency is not a recognized or diagnosable clinical entity in this country. 2. With ordinary diet yeast does not have any effect on growth, even of babies and children. 3. The one effect of yeast that has been definitely established is the laxative effect. This may be useful in chronic constipation but no direct method of study is at present available for determining its advantages or disadvantages in comparison with other laxatives. After considering the recommendations of its Research Committee, the Council for the present decided against an investigation into the problematic usefulness of yeast as a therapeutic agent. (*Jour. A. M. A.,* Oct. 14, 1922, p. 1354.)

ARSENAURO.—Some ten to twenty years ago, this preparation had considerable vogue. It is believed to be similar in composition to solution of gold and arsenic bromid of the National Formulary. This contains bromid of gold and arsenic acid. Gold preparations were at one time believed to have therapeutic value, particularly as "alteratives." They have proved inefficient and have been discarded. (*Jour. A. M. A.,* Oct. 21, 1922, p. 1446.)

CLEARO.—This was a "patent medicine" sold by C. E. McCuistion, Dallas, Texas, doing business as "The Clearo Co.," as a cure for tuberculosis, asthma, bronchitis, hayfever, serious throat and lung troubles. An investigation by the post office authorities led to the conclusion that the product was worthless for the purposes claimed and that the Clearo Company was engaged in a scheme for obtaining money through the mails by means of fraud. The Clearo Company has been denied the use of the mails. (*Jour. A. M. A.,* Oct. 21, 1922, p. 1445.)

TYPHOID VACCINATION BY MOUTH.—Besredka has proposed vaccination against typhoid by mouth. His vaccine consists of a pill of bile and a tablet containing a mixture of heat-killed typhoid and paratyphoid bacilli. These are taken three mornings in succession. It is for the future to determine whether or not the method has value. (*Jour. A. M. A.,* Oct. 21, 1922, p. 1446.)

THE REACTIONS OF BOSTON TO THE "REACTIONS" OF ABRAMS.—Abrams gave a clinical demonstration of his methods in the laboratory of one of his disciples in Boston. Abrams refused to submit the method, it is said, to any test offered, but confined himself to demonstrating the presence of lesions the existence of which could be proved only by postmortem examination. A member of the staff of the *Boston Medical and Surgical Journal,* a man in perfect health, was selected for experiment. By his diagnostic methods Abrams discovered in this healthy individual a streptococcus infection, tuberculosis of the intestinal tract, congenital syphilis and intestinal sarcoma. Otherwise the man was all right. It is understood that the volunteer inconsiderately refused to submit to a postmortem examination. (*Jour. A. M. A.,* Oct. 28, 1922, p. 1524.)

SUSTO.—According to the trade package Susto is a "Vitamin Tonic Food in Concentrated Form, rich in the Vitamins of Rice, Eggs, Milk and Yeast, Notably rich in Fat Soluble and Water Soluble Vitamins A, B,

C, together with Beef Proteins, Nucleins and Iron." Susto is put on the market by Chester Kent and Co., Boston, better known as the sellers of Vinol. Vinol was essentially an alcoholic tonic, containing unrecorded amounts of iron, manganese peptonates, iron and ammonium citrate, lime and soda glycerophosphate, beef and codliver peptone, cascarin and sodium salicylate and 18 per cent alcohol. Some years back Vinol was advertised as a codliver preparation without oil. Vinol seems to have been made for Chester Kent and Co. by Frederick Stearns and Co., the firm which made Stearns Wine of Codliver Extract with Peptonate of Iron. When alcoholic tonics were no longer good form, Chester Kent and Co. employed Philip B. Hawk, Professor of Physiologic Chemistry at Jefferson Medical College, Philadelphia, to "perfect" a product that was sent him as Vinol Powder. Hawk did this: he also furnished the company with clinical reports and experimental data that could be counted on as valuable advertising thunder. Thus was born Susto. Patent medicine exploiters are cognizant of the fact that the public can be more easily humbugged on the food tonic scheme than by any other, particularly so when they can get the active coöperation of men whose scientific training should put them above such things. For one dollar the purchasers will get a few cents worth of food material. (*Jour. A. M. A.*, Oct. 28, 1922, p. 1538.)

Progress and Conservatism in Therapeutics.—The Committee on Therapeutics of the Council on Pharmacy and Chemistry has published a communication calling attention to two books which physicians should have—*New and Nonofficial Remedies* and *Useful Drugs*. It is explained by the Committee that for eighteen years the Council has done its utmost to bring before the medical profession the truth concerning the new proprietary medicinal preparations which are being offered to the profession. The work and functions of the Council are discussed, and it is explained that while the Council was organized primarily to put a stop to the exploitation of proprietary medicines under false claims and the use of secret preparations, its activities have broadened until its work may now be characterized as a "propaganda for the rational use of drugs." The communication concludes: *New and Nonofficial Remedies* and *Useful Drugs* together furnish information concerning all drugs, old and new, which are at present essential to, or give promise of value in, the practice of medicine. They have been compiled with a special object in view, namely, to meet the needs of the student and practitioner of to-day. The report is signed by C. W. Edmunds, M.D., Professor of Materia Medica and Therapeutics, University of Michigan, Ann Arbor, Mich.; John Howland, M.D., Professor of Pediatrics, Johns Hopkins University, Department of Medicine, Baltimore, Md.; Ernest E. Irons, M.D., Ph.D., Associate Professor of Medicine, Rush Medical College, Chicago, Ill.; W. T. Longcope, A.B., M.D., Professor of Medicine, Johns Hopkins University, Department of Medicine, Baltimore, Md.; G. W. McCoy, M.D., Director Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.; W. W. Palmer, B.S., M.D., Bard Professor of Medicine, College of Physicians and Surgeons, Columbia University, New York City; Francis W. Peabody, M.D., Professor of Medicine, Medical School of Harvard University, Boston, Mass.; L. G. Rowntree, M.D., Sc.D., Professor of Medicine, Mayo Foundation, Rochester, Minn. (*Jour. A. M. A.*, June 2, 1923, p. 1635.)

More Misbranded Nostrums.—The following preparations have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: Woods V. Tabules (Edward J. Woods), containing zinc phosphid, strychnin and plant extractives. Lukosine (National Drug Co.)—a powder containing approximately 80 per cent of boric acid and small proportions of zinc sulphate, alum and a salicylate, and traces of alkaloid, phenol, thymol and menthol. Eckman's Alterative (Burrows-Little-White Co.), consisting essentially of 94.4 per cent of water flavored with clove oil, 3.3 per cent of calcium chlorid and 2.3 per cent of plant extracts. Gombault's Caustic Balsam (Lawrence-Williams Co.)—a mixture of a fatty oil with approximately 20 per cent by volume of oil of turpentine. McGraw's Oil of Life (McGraw Remedy Co.), consisting approximately of 95 per cent of kerosene and small proportions of turpentine oil, tar oil and camphor. Vital Sparks (Hollander-Koshland Co.), gelatin capsules containing a fatty oil, colored red, and a sugar coated pill of zinc phosphid, damiana and strychnin. Mydyl Antiseptic Wafers (Chas. S. Ruckstuhl), composed of borax and starch. Syrup Leptinol (Balsamea Co.), consisting of Leptotaenia dissecta (a plant belonging to the parsnip family), sugar, glycerin, alcohol and water. Sangvin (Dr. M. Spiegel & Sons), composed essentially of plant drugs, including a laxative drug, sugar, alcohol, glycerin and water. Peterson's Ointment (Peterson's Ointment Co., Inc.)—a petrolatum ointment containing zinc oxid, tannin, phenol, and camphor. (*Jour. A. M. A.*, June 9, 1923, p. 1710.)

Cod Liver Oil in Tuberculosis.—Experiments carried out in the Hygienic Laboratory of the U. S. Public Health Service to determine the effect of cod liver oil on the tuberculosis of the guinea pig failed to show any definitely beneficial effects. There was no evidence of the deposition of calcium when this element was administered along with the cod liver oil. These results warn against unwarranted optimism and justify critical investigation whenever calcium or cod liver oil are lauded as a specific in tuberculosis. (*Jour. A. M. A.*, June 16, 1923, p. 1778.)

Peptone in the Treatment of Migraine.—The Council on Pharmacy and Chemistry publishes a preliminary report on the experimental status of the use of peptone in the treatment of migraine. Drs. Joseph L. Miller and B. O. Raulston report that the intravenous administration of Peptonum Siccum-Armour brought about improvement in a considerable number of cases. The Council points out that commercial peptones are heterogenous mixtures of uncertain composition, and that the results reported may have been due to tissue impurities rather than to peptone itself. It is, therefore, evident that the reported results cannot be made the basis for a rational treatment of migraine. Peptonum Siccum is stated by Armour & Co. to contain 90 per cent of protein. Seventy per cent of the protein content is in the form of peptone and secondary proteoses, while the remaining thirty per cent is in the form of amino-acids. Those who wish to make experiments with peptone in the treatment of migraine should use the particular peptone used by Miller and Raulston or one which has an essentially similar composition. (*Jour. A. M. A.*, June 30, 1923, p. 1910.)

PHYSIOLOGIC CLINKERS

One reason why the professional study of science in general, and medicine in particular, has failed to win public applause and gather popular support in larger measure than it does at present lies in the distortions

and misrepresentations to which this department of learning has all too often been subjected. The quack and the impostor make no sincere pretense of adhering strictly to the known in heralding their claims; the pseudoscientist usually dresses his progaganda in a variety of raiment that may include ignorance, erroneous belief and mere conjecture. All too often, even the reputed scientist is found supporting a doctrine that is dangerously near uncertainty of demonstration, or rests at best on the basis of inadequate investigation. Much of the scientific teaching of to-day is permeated with a cock-sureness that is unwarranted by the meager facts of experience or experiment.

When the out-and-out fraud is perpetrated we do not hesitate to assail the perpetrator. The Propaganda for Reform supported by the American Medical Association is frank and unrelenting in its attacks on such persons as nostrum venders and their ilk. Even the public can usually appreciate the propriety and benefit of these efforts to eradicate a harmful evil. Criticisms of the food faker, the health faddist and similar types of pseudoscientists usually find a less sympathetic hearing, possibly because the man in the street is unable to distinguish between the language of these uncritical if not unscrupulous propagandists and that of the honest devotee of science. As for the unweighted or unguarded statements of the latter, they are often received as the dictum of "authority." Who among us can always discriminate between the offhand remark and the well reasoned belief of an "expert" in science?

The time has come when those interested in the dignity of science should protest, wherever it seems desirable, against any semblance of finality or any assumption of authority in unwarranted statements of those who trade on scientific investigations. When we hear the enthusiastic advertiser say that "fish is a brain food" or that his suction device will "grow hair" on a bald head or that electric belts will prevent an attack of rheumatism, let us soundly berate him. Let us not overlook the more subtle forms of questionable information such as recently appeared in the alleged remarks of a president of one of the prosperous medical cults. Attacking what he termed "food drunkards," he was quoted widely as saying:

The American diet of bread and meat and potatoes, topped off with sweets, is the cause of more spinal curvature and joint deformation than any other one thing. If congress would place a tax of a dollar a pound on sugar, the national health would show an immediate improvement. As for bread and meat and potatoes, they are too heavy and concentrated, and form clinkers in the system.

It is, of course, true that bread and meat are "concentrated foods" when compared with fruits and vegetables in general. However, few foods in the entire dietary of man show as high a coefficient of digestibility as do the items which the "drugless" food "expert" has so glibly condemned. What, then, is meant by "clinkers in the system" in the case of these foods? Surely not indigestible residues. Studies in nutrition belie such an answer. Or are there perhaps "clinkers" in the metabolism—some half-oxidized fragment of an amino-acid or glucose? Scientific reasoning fails here when the unmeaning analogy of the cellar furnace is used to conjure with before an audience that understands the firebox of iron and clay only. Bread, the backbone of our national dietary, produces physiologic clinkers? Bosh! And, yet, a little physiologic knowledge is a dangerous thing—in the hands of a clinker expert.—*Jour. A. M. A.*, July 21, 1923.

PASTEUR AND THE CHILDREN

In view of the intimate relationship between the discoveries of Louis Pasteur and the prevention of infant disease and the protection of child health, it is interesting to have attention called, as Dr. John Foote has recently done in "Mother and Child," to the special philosophy of Pasteur as related to children, and to the manner in which France has recognized this aspect of the great investigator's life. France has perpetuated this relationship in virtually all of the monuments raised to its greatest citizen. At Dôle, where Pasteur spent his boyhood, a mother and two sick children symbolize grateful humanity. At Arbois, near by, where Pasteur passed his boyhood, is a bronze statue looking up the street on which Pasteur walked on his way to school. At Lille, Pasteur stands on a pedestal, holding a flask, while below a peasant woman holds up to him a child in token of her gratitude. And before the Pasteur Institute stands the well-known figure of the courageous shepherd boy holding off a mad dog. In the life of Pasteur, as told by Vallery-Radot, are the beautiful letters which he wrote to his children, emphasizing his humane regard for child life. Dr. Foote wisely suggests that the story of Pasteur and his work be told to every child, for in this manner may we hope for a future generation firm in its support of true science and ready to assist in the prevention of disease.—*Jour. A. M. A.*, June 16, 1923.

BUBBLES

To err is human, but for a doctor to err is sometimes inhuman.

Wonder if conscience isn't one of those undiscovered endocrine glands.

They say 'twas a goose that laid the golden egg. Then, if birds of a feather flock together, is that the reason why some of our quack friends have such luck in picking up golden eggs?

Somebody better arrest the Governor for practicing surgery without a license. We do hear he has been cutting appropriations lately in a simply scandalous way.

Why all the fuss about whether or not man springs from monkeys? There is no question at all that woman springs from mice whenever she sees them.

A patient waiting in the oculist's office until the doctor had treated the ten or more patients preceding her was recently heard to remark: "Doctors don't have to work hard, and they make a lot of money." Oh, boy! Wish somebody'd show us how to do it!

The A. M. A. celebrates its seventy-fifth anniversary in 1924. Do you know of an older organization in the U. S. with a better record behind it?

Abrams says that every disease has its fundamental vibration ratio. Wise man! He picked out a specialty of which nobody knows the first thing, so he can always say that his critics don't know what they are talking about.

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ORIGINAL ARTICLES

EARLY DIAGNOSIS AND TREATMENT OF MALIGNANT DISEASE OF THE LARYNX*

FIELDING O. LEWIS, M.D.

PHILADELPHIA, PA.

To go fully into all the phases of the early diagnosis and treatment of malignant disease of the larynx, and to review the literature, would consume a great deal of time. I shall, therefore, confine myself to the brief discussion of the most important points, and relate some of my own experiences.

In treating malignant disease of the larynx intelligently, one must bear in mind the clinical classification, for the location and extent of the lesion determines the treatment, and to a large extent, the life of the patient. The clinical classification as suggested by Krishaber seems concise and adequate, viz: first, intrinsic, i. e., arising from the vocal chords, ventricles, ventricular bands, interarytenoid and subglottic area; second, extrinsic, i. e., arising from the epiglottis, arytenoids, aryepiglottic folds, pyriform sinuses, and pharyngeal surface of the cricoid cartilage; third, mixed, consisting of intrinsic and extrinsic.

Fortunately, intrinsic cancer, as shown by statistics, occurs more frequently than extrinsic, the vocal chords being the most frequent site of involvement. It develops slowly, does not extend rapidly, and metastasis is late due to the confined arrangement of the laryngeal lymphatic system. There are abundant lymphatics within the larynx, which anastomose freely with each other, but communicate with only a small gland on each side of the larynx which does not directly communicate with the general lymphatic system. To this anatomical arrangement is due the success of proper operative measures in the intrinsic type of laryngeal cancer. The extrinsic cancer is a different story, the course is rapid, the glands are involved early, metastasis occurs rapidly, and operative procedures are much less hopeful.

*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

Early diagnosis of laryngeal cancer is of the utmost importance, for when recognized in its incipiency 80 per cent of cures may be expected if proper surgical treatment is at once instituted. The early signs and symptoms are usually few and varied, depending largely upon the size and location of the growth. If located on a vocal chord, hoarseness is usually the only early symptom, while, if located on the aryepiglottic fold, it may develop to a considerable size, and indeed involve the glandular structure of the neck, without producing symptoms of any severity.

One should not wait for the symptoms described by the old textbooks, such as pain, dysphagia, dyspnea, cachexia, and glandular metastasis. These are grave symptoms, and when present the patient has already usually one foot in the grave. In those cases which complain of stinging pains in the throat, associated with hoarseness lasting for more than a few weeks, the patients should not be given sprays and laryngitis tablets until the larynx has been properly inspected by a competent laryngologist. All cases of hoarseness lasting more than a few weeks, especially after the age of forty, should be looked upon with suspicion, and a thorough examination is at once indicated, this to include, besides a thorough inspection of the larynx, a general physical examination, including examination of the blood and chest, and x-ray.

Cancer of the larynx may readily be confounded with tuberculosis, syphilis, chronic laryngitis, perichondritis, pachydermia, and benign growths, or it may be coexisting or superimposed upon one of these conditions. One-sided indurating lesion, with lessened chord mobility, is very suggestive of malignancy. The early involvement of the cricoarytenoid joint, producing immobility from infiltration, is a distinguishing feature between benign growths of the larynx. Pain on swallowing and radiating to the ear, is a late symptom in the intrinsic form, but may be present early if located on the aryepiglottic folds. The appearance of the lesion may be misleading. Papilloma often have a suggestive appearance.

Should biopsy be practiced in all cases, is a question often debated. Some are of the opinion

that it is a means of stimulating the growth. My own personal feeling in this regard is that I should not care to have my larynx treated radically without the diagnosis being confirmed by the pathologist. This was forcibly impressed upon me two years ago by seeing a patient sixty-eight years of age with an ulcerated growth located on the right vocal chord. It was thought by two laryngologists to be malignant, the entire growth was removed by endolaryngeal method, and biopsy proved it to be a simple papilloma. There has been no evidence of any recurrence. I have since seen another similar case, and it was not possible to make a definite diagnosis except by biopsy. I therefore feel that for all doubtful neoplasms of the larynx a portion of the growth should be removed for microscopic examination, provided it is made to include the deeper tissues; otherwise, it may not be confirmatory.

The tissues should be examined as rapidly as possible, so that no time is lost in carrying out the proper treatment, should cancer be the diagnosis.

Treatment: The history of the treatment of laryngeal cancer covers a long period, and the literature is voluminous. No treatment as yet discovered has produced results as compared with those accomplished by surgery in operable cases of cancer of the larynx. In properly selected cases, among well-known forms of surgical procedures that are described, depending upon the size, site and extent of the growth, are: first, endolaryngeal excision; second, thyrotomy or laryngo-fissure; third, partial laryngectomy; and fourth, total laryngectomy.

Endolaryngeal excisions condemned by most writers on the subject, as being inadequate. However, apparent cures have been reported by Harmon Smith, Beck, pierce and others. A Japanese laryngologist, Okada, reported in June of 1922, at the meeting of the American Laryngological Society, fifteen cases of carcinoma of the larynx treated by this method, in only three of which were the results not good. All agreed, however, that this type of operation for malignancy of the larynx is limited to a very few selected cases in which the growth is strictly confined to a small area.

The operation is best performed by direct laryngoscopy, some preferring the suspension type. Thyrotomy, or laryngo-fissure, for cancer of the larynx, is said to have first been practiced by Dr. S. Solis Cohen, the father of American laryngology, in 1868, and developed later by Delavan, Jackson, Semon, Butlin, and others. Of this, Jackson says:

"In an early intrinsic malignancy of very limited extent, not involving the posterior portion of the larynx, the results of thyrotomy have been positively brilliant. Nowhere in the whole realm of surgery of malignant diseases have such results been obtained as in thyrotomy in such cases."

The indications for this operation are limited to that type of intrinsic cancer of the larynx in which it is possible to excise the entire growth over an area sufficiently wide to include normal healthy tissue. If, in splitting the larynx, it is found that such a procedure is impossible, then all preparations should have been made to proceed with a more radical operation.

A recent contribution by Sir St. Clair Thomson, on the results of 51 cases treated by this method, is most interesting. Thirty are free from recurrence, and alive, at periods varying from one to thirteen years. Eleven survived from various periods up to ten years, and died of other diseases. Two cases died within forty-eight hours after operation. The remaining eight cases died of local recurrence.

The statistics of Semon and Jackson are in about the same proportion.

Personally, I have had only two cases on which I have performed a laryngo-fissure. One died of recurrence within eight months; the other is still living and well, after two years.

The technique of this operation is so well described in most textbooks that I shall venture to show only a few slides of the important steps.

Partial laryngectomy, because of the marked infective pulmonary risks and high mortality, is very seldom employed.

Total laryngectomy, an operation of an extremely high mortality in the early days of its development, has in recent years been the means of saving the lives of many cases suffering from this unfortunate disease, and no doubt many more who have died might still be living had this operation not been refused, or had not temporizing and ineffectual measures been resorted to.

The indications for total extirpation of the larynx are all cases of intrinsic cancer in which thyrotomy is contraindicated, extrinsic cancer in which there is no mediastinal evidence of metastasis, and those cases in which the general condition of the patient is sufficient to warrant such an operation. Many cases of cures of laryngeal cancer are removed from this operation.

I wish simply to report briefly, by the use of lantern slides, the results obtained in seven cases of total extirpation of the larynx. While the period since the operation on the living cases is far too short to determine the cure, yet the enthusiasm and optimism is so great for the relief afforded these unfortunate patients, that I deem it advisable to present them at this time. Of the seven cases four are living. The longest period since the operation is one year, and the shortest

five months. There were no surgical deaths. Of the three deaths one lived six months and died of recurrence in the thyroid gland. Another lived four months and died of metastasis of the lungs and mediastinum. The third lived three days and died of what was thought to be an embolus.

Radium has been used in all stages of laryngeal cancer. The results have been varied and confusing. Some have reported cures; the majority have been failures. It has been my privilege to use it in many cases, but without any permanent results. I have seen retrogression occur in the most astonishing manner, only to recur in a most virulent and rapid form. I believe radium is of the greatest value as a preoperative and postoperative measure.

DISCUSSION

Dr. Robert Ridpath (Philadelphia, Pa.): I am very glad to hear this paper and congratulate Dr. Lewis on presenting it. There were one or two points which struck me as very good, and there is one point which I think he should have mentioned. Although the paper is entitled "Early Diagnosis," I think it would have been better should he have pointed out more clearly the difference between the position of malignant and benign growths in the larynx. Although he did show in one of the lantern slides a malignant growth on the anterior part of the larynx, generally speaking, in 70 to 80 per cent of his cases the growths occurred at the posterior. These reports include papillomas, angiomas, etc. Therefore, malignancy of the larynx usually is in the middle or posterior third. We do have carcinoma and various malignant growths occurring in the cord itself. In my experience this extends very rapidly to the muscular structures connected with the cord and the ravages of the disease are much more in the muscular structures than in the cord itself in the very beginning or early stage.

Dr. Lewis is perfectly right and I am glad he brought out the point that the extrinsic malignancy is much more rapid than the intrinsic. Concerning the procedure for treatment of these cases: unfortunately, my experience has been decidedly limited since Dr. Jackson came to Philadelphia. Before his advent here we saw many more cases than we do now, because they very wisely go to him. However, if we can possibly diagnose or suspect a malignancy of the cord or even of the adjacent structures in its very beginning, I doubt the wisdom of taking this out by the direct method. My experience has been that this does not remove the growth in its entirety. Others may have better results. I find that the method devised by Dr. J. Solis Cohen many years ago—going into the larynx, opening it, as Dr. Lewis has so beautifully pictured—will give a better result than trying to remove the growth by the direct method.

Dr. Lewis (in closing): I should like to correct a false impression and that is if we suspect malignancy the growth is never operated on endoscopically. A biopsy is done and if the diagnosis is cancer, the operative procedure which we deem best is carried out.

Replying to Dr. Mosher, I have never used rectal anesthesia in laryngectomized cases as the narcosis is not so well controlled. I much prefer the ether or chloroform. I have used it however in rhinoplastic cases with excellent results.

MEDICAL CARE OF DEPENDENT CHILDREN*

HORACE H. JENKS, M.D.

PHILADELPHIA

At first thought one might consider the medical care of dependent children no different from the care of other children. It is one of the objects of this paper to show that there are differences and to point out what these are. A second object is to explain the workings of the Associated Medical Clinic of Philadelphia which is a clinic concerned solely with dependent, neglected or subnormal children. Finally we wish to discuss a few of the unusual problems connected with this work and to show some of the results, good and bad.

These terms, dependent and neglected children, are broad. They include not only what you probably think of first—the child without either or both parents, who has stolen or run away or committed some other moral wrong and becomes a charge upon society in general through the agency of the court—but the words are far broader and may include babies, either legitimate or illegitimate. The latter may have to be cared for temporarily pending recovery of the mother, or more permanently until the mother's support can be arranged for. Babies born in wedlock may be turned over to some charitable agency through breaking up of the family by death or illness of one or both parents, poverty or many other causes. Children of either sex become wards of the Children's Aid Society or Children's Bureau for temporary or semi-permanent care, being committed by the court through some family upheaval, or because of failure properly to support the family or because the child is unwelcome in his home owing to the peculiarity of his behavior or apparent or real mental defect. Children may be committed to the care of the Cruelty Society as a result of abuse. Finally there is a great mass of children passing through the care of charitable agencies for observation and temporary care because of truancy, backwardness, minor moral failings, etc.

In an effort to secure a complete physical examination of these children, two years ago the medical examining clinic formerly held in the back rooms of one of the agencies, was reorganized. This reorganization resulted in formation of the Associated Medical Clinic, now in the Department for the Prevention of Disease of the Children's Hospital and supported by the Children's Aid Society, Children's Bureau, Seybert Institution and the Pennsylvania Society to

*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

Protect Children from Cruelty. The organization of the clinic is briefly as follows: One physician, one assistant physician (a graduate of the Woman's Medical College), two trained nurses (one giving full time to the home visiting of Children's Bureau babies and the other giving half time to the clinic and half to visiting the Children's Aid Society babies), a consulting pediatrician, a consulting dermatologist, a surgeon, a serologist, an ophthalmologist, a dentist and a radiologist who is also the radiologist to the Children's Hospital. All are salaried except the consultants. The assistant physician is on full time, giving her afternoons to the visiting of children who may be sick in foster homes. The other officers are all on part time. The volume of work is fairly large, 5,389 visits being made to the clinic in 1921 and 1,295 new children being sent for first examination.

The object of the Clinic is to afford to each child coming under the care of any of the agencies mentioned, the opportunity for a complete physical examination. Upon his first visit the child is weighed and measured. He is then given a thorough examination from head to foot. The skin, nose, throat and teeth are carefully inspected, and the head for nits, lice, ringworm, eczema, etc. As a matter of future reference it is well to put in the history whether or not lice or nits are present.

Heart, lungs and abdomen are carefully examined. Boys are examined for phimosis and undescended testicle, and girls for the presence of any vaginal discharge, and if they are to be placed with other girls or babies, a vaginal, or if possible, a cervical smear is taken. Posture and the general state of nutrition are considered, special attention being given the shoulders, spine, knees and feet. A routine blood Wassermann test is not made but any suggestive sign of congenital syphilis or an immoral family or personal history call for this test. It is made on all foundlings and on all children to be admitted to certain institutions, for which the Clinic acts as admitting physician. Eyes and ears are given a general testing, and if any abnormality is found the child is referred to the proper specialist for more thorough examination.

2. The greatest problem met with in the dependent child (apart even from unhappiness) is that of malnutrition. Adopting the weight to height ratio (except *always* in certain unusual children) and using the tables compiled by Emerson of Boston for the Nutrition Clinics for Delicate Children, we found during the year 1921 that of 1,295 children coming for the first examination 715, or 55.2%, were underweight, and of these 287, or 22.1%, were 10% or more underweight. In 1,137 of these 1,295 children, or 87.8%, one or more abnormal conditions was found. It should be remembered that the children comprising this series are children in many cases who have been neglected or abused; some have been runaways and others unwelcome in their homes or children who have been intensely lonely or unhappy, so that the standard of nutrition in this group is naturally unusually low, and the percentage of underweight or otherwise abnormal children should not be compared even with those of the ordinary public school group.

In an effort to discover whether underweight bears any relation to anemia, routine examinations of hemoglobin and erythrocytes have been made for the past nine months on children 10% or more underweight. The results of this study will be published separately but it may be said very definitely that we have found no direct ratio between the percentage of underweight and the decrease of red cells or hemoglobin.

Naturally it is of no use to the child to have all of these examinations unless he is to benefit thereby. As soon as the examination is finished the result is dictated and typewritten in duplicate, one copy going at once to the society referring the child (being telephoned if there is need), the other copy being kept on file at the Clinic. At the close of each examination definite recommendations are made as to what is necessary to put the child in good, or at least better, physical condition. During the examination it is important to be constantly considering the child's mental condition, his general state of intelligence, etc., and those children distinctly subnormal or apparently under some mental or emotional strain are referred to the Department of Child Study, under Dr. Taft, for mental examination.

It is important with all of these undernourished children to state definitely when they should return to the Clinic. Children 10% or more underweight return in from two to four weeks, depending on their condition. If there is any suspicion of tuberculosis, of course they return sooner. All children under foster care should be reëxamined once a year. A card check list is very valuable to make sure that such children do return when desired and to make sure that suggested recommendations are being carried out.

It has been the policy of the societies maintaining the Clinic to grant the greatest freedom in the use of the laboratory and the x-ray. There is no restriction placed upon the Clinic as to the amount of pathological or serological work. As a result blood and urine studies are freely made. A urine examination is made be-

fore each dose of salvarsan and on many (but not all) new children. Metabolism studies have been made on a few children who show symptoms of endocrine disturbances and we have believed it safer to make such studies before and during the administration of such substances as thyroid or pituitary extract.

The Schick test and where necessary toxin-antitoxin have been given to new children of the Children's Aid Society and the Children's Bureau. No case of diphtheria in children so immunized has occurred within the past two years.

A child must not be sent to a foster home without careful follow-up work by the social worker and nurse. Underweight children must have their diet and hours of rest, play, work and sleep very clearly mapped out and supervision must be exercised to see that this is done. Many, if not all, undernourished children need more rest fully as much as more food—rest of mind as well as body.

3. During the past year the average number of babies under the age of 3 years which the Clinic has had under its care has been 50, and the highest at one time 65. These babies represent all varieties of feeding problems from the simplest to the most complicated. Many are newborn, and artificial feeding must be commenced at once. Many are abruptly weaned, many have been overfed or wrongly fed and are ill when first seen. If the baby is obviously too ill to be cared for in a foster home he is admitted to the Children's or Babies' Hospital. Otherwise he is sent to one of the foster homes or possibly to a nursing home where a few children are kept for more accurate observation under the care of two trained nurses.

It has been the policy of the Clinic to feed the infants on milk mixtures as simply made as possible. Top milk mixtures are largely used and do not prove too complicated for the average foster mother. A Chapin dipper is supplied by the Society when necessary. Many of the younger babies are carried along for weeks on mixtures using the top 24 or the top 20 oz. milk. This avoids the necessity of purchasing cream and is probably also safer.

The Clinic has adopted the method of follow-up care of these babies described by Dr. Maynard Ladd[1] of Boston, whose clinic to those of you who are interested in this phase of medicine will prove most inspiring. The babies are visited every week or every two weeks by the nurse who carries with her a pair of light scales. (Ill babies are visited as often as necessary.)

Once a week the nurse reports at the Clinic for what we call "Baby Conference." We believe this to be a most important part of the baby work. At this conference also both Clinic physicians are present and the Supervisor of case work in the Placing-Out Department of the Society. A separate conference is held for the Children's Bureau and Children's Aid Society babies. The nurse reports on the weight and general condition of the baby, the weight being recorded on a chart. The condition of the stools, vomiting (if any), appetite, sleep, amount and formula of feedings are recorded on a special sheet for that purpose. Changes (if any) in the feedings are given in writing to the nurse. If a baby is not doing well, of course, a report is made at once to the Clinic by the nurse and the child is visited within a very short time by the assistant physician. Most of the boarding homes have a telephone and the foster mother is directed to call the nurse immediately if the baby is at all indisposed. It has been found advisable for the society to furnish beam balance baby scales in two of the homes where the more difficult cases are kept.

It has been a revelation to us to see how well babies may do under these conditions. Many of the babies are not seen in the Clinic for months at a time and yet the weight increases normally and the baby seems well in every way. The success of such a plan as this depends on the intelligence, accuracy and training of the nurse supervising in the foster home. With a careless or incompetent nurse it is doomed to speedy failure. A very important feature also is the training and coöperation of the boarding mother. She must be loyal to the Clinic, reasonably intelligent, willing to carry out orders and not to assume too great responsibility for the early signs of illness. Once the foster mother shows her interest in the problem, it should be the duty of the Society and the Clinic staff to stimulate her to increasingly higher ideals in child care. It is best to have but one baby in a foster home, at most not more than two. The success of such a medical program rests also with the societies or organizations supporting the Clinic. They must make it possible for the foster family to carry out the treatment prescribed. No adequate diet can be expected for the undernourished child at the average rate of board of two and a half or three dollars a week. During the year 1921 there were 5 deaths of babies under our care, due to marasmus or acute gastro-enteritis. To date in 1922 there have been three deaths, all due to marasmus, one complicated with furunculosis. (This includes deaths in hospitals.)

We have used extensively the strained vegetable soups, pea, bean, potato, carrot, spinach and celery, at times beginning as early as the 5th or sixth month once a day and increasing to

twice a day at the end of the year. These soups are made up with the babies' formula instead of whole milk.

4. The work with older children from ten to sixteen or seventeen offers many problems. Here too as in the younger children the question of undernourishment is ever present. From our experience we most emphatically agree with Emerson,[2] Veeder[3] and others that this is perhaps quite as often due to lack of rest as to lack of food. We find the former more difficult to remedy than the latter. For children with marked undernutrition in addition to the extra milk and eggs, cereals, vegetables, etc., ordered, an outline of the child's rest, play and work and sleep periods should be given to the caretaker and checked up by unannounced visits of the nurse or social worker.

Naturally during this period of adolescence and school life there will be many problems based on sex hygiene. We have found the practice of masturbation unusually prevalent in both boys and girls. Enuresis is very common in this class of children and very difficult of cure. It is hard to find the foster home sufficiently interested to waken the child frequently during the night. We have tried the subcutaneous injection of pituitrin as suggested by Jacobs at the last meeting of this society, but we do not believe the drug to be entirely safe for children, as a few of our children had vomiting, vertigo, chilliness and marked pallor. The use of the extract of the whole gland by mouth is safer in doses one quarter to one grain twice or three times a day and occasionally succeeds after other measures have failed. We have found the most important element in the cure to be the absolute restriction of all fluids after 4 p. m.

To those of you who have not investigated the mental side of the child's life a whole new approach to pediatrics opens up. The studies made upon the children from our Clinic by Dr. Taft[4] are always interesting and often provide a clue to the medical diagnosis that would otherwise be missed. The relation between misconduct and mental worry is only beginning to be appreciated and both may have important relations to undernutrition. To those of you interested in this subject, Mr. William Healy's books[5] gleaned from his unusual experience at the Juvenile Courts of Chicago and Boston, will prove a mine of interesting information.

It is most important to have a woman physician trained not only in gynecology but in the psychology of girlhood for the examination of the older girls. Many of these girls have had unfortunate sex experiences (very often from ignorance entirely), others are on the road to becoming sexually promiscuous, others may simply be worried over sex matters in general, or some abnormality in menstruation or even the presence of leukorrhea, and a thorough examination and one or more friendly talks with her physician may suffice to put the girl on the right track.

At the request of the Philadelphia Society for Organizing Charity the Associated Medical Clinic is now making a medical survey of one hundred entire families—families who for some possibly unknown reason are gradually sinking in the social scale. Every member of each of these families is examined and a report is sent to the head of the society or his representative. It is important in providing information of this nature that it be submitted to some *one* responsible person for use in the proper manner. The discovery of some of the physical findings, as cardiac disease or early tuberculosis, has been of distinct benefit to the family itself.

5. In conclusion, we wish to state the following few facts:

1. Every dependent, delinquent or backward child is entitled to and should have a thorough physical examination before judgment is passed on him or her.

2. Children being admitted to the care of any charitable organization should have a complete physical and, if necessary, mental examination, and this should be repeated at least once a year.

3. Underweight children must have their hours of play and work as carefully outlined as their diet. They should be reëxamined every 2 to 8 weeks.

4. With the aid of competent nurses it is perfectly possible to take care of large numbers of babies in foster homes without the necessity of bringing the babies to a clinic.

5. We believe it far preferable to take care of dependent children in foster homes than in large institutions. The latter is undoubtedly the easier, but does not compare in value to the child.

6. The life of the dependent child at best is one full of difficulties, uncertainty and much unhappiness. To those working with these children it should be a privilege to make their lives healthier, more stable and more happy, and this can be done by proper and enthusiastic coöperation of physician, social worker and nurse.

7. In cities when several organizations are working with children and their problems, it is economically advisable to maintain a single examining clinic working in close coöperation with hospitals.

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DISCUSSION

Dr. William N. Bradley (Philadelphia, Pa.): I am very willing to admit that I feel quite incompetent to discuss this paper so admirably presented by Dr. Jenks, for I think it is a unique work; it is something which is in a class by itself, and I should say that Dr. Jenks must have a wonderful nervous system to be able to withstand day by day the very depressing effect of dealing with this class of children.

It seems strange to us as we look back and wonder why the public conscience was so long awakening. It is within the recollection of all of us when most of these cases were simply sent to homes and institutions very much in the same manner that a stray dog is sent to the dog pound. But that is not so to-day and these children, as Dr. Jenks has pointed out, through the agencies which he represents are apparently getting a square deal.

I should like to lay particular stress upon the physical examinations made by him; likewise to support his statements regarding placing these children in private homes instead of institutions. I should like to go further and say that I believe we should start propaganda to educate people of moderate and large means to take these children into their homes, not for pay necessarily, but as a philanthropy.

The value of the work, aside from what I have said, lies in following the cases routinely, noting the care they are receiving, and routinely examining them for development and growth.

For children of all ages I am a firm believer in directed play and playgrounds. Children should play, but I believe it is important, in older children particularly, that their play should be supervised and controlled. The class of children Dr. Jenks refers to should not be left alone to their own devices, for if they are they soon contract the vices without the prefix.

I can visualize no better work for our public libraries than to be equipped to entertain girls and boys of 6 to 16 by classes, or groups, leading them into the paths of finer things, interesting them in selected books, games, amateur plays, organizing clubs for boys and girls, giving them an interest and a new view of life. Camp Fire Girls, Girl Scouts, Boy Scouts, Junior Red Cross leagues, are only a few of the methods which are helpful in the way which I have mentioned. What we need is more community life. The libraries and schools should be always at the disposal of those whose aim is to stimulate for good and counteract influences for evil.

I have already mentioned the importance of physical examinations and mental tests. I believe also that before a child should be permitted to work, he or she should be required to come up to a standard of physical and mental fitness.

How are we as pediatrists concerning ourselves about the poor little lives that are being sacrificed on the altar of greed? How about the small children in the cotton fields, the beet fields, and truck farming? How about the coal breakers and the back breakers represented by the canning industries of the West, where boys are so exhausted after their day's work that they sleep in the fields in preference to walking the distance to their homes.

We know of mothers who must work, locking their children in the room all day, with little food, and in one case I know of personally, a child was locked out of the house all day until the mother should return at eight or nine o'clock at night.

What is needed is improvement in our economic conditions, measures for the prevention of accident and disease, provision to fill the father's place when he shall be dead or incapacitated, protection for working mothers suffering from fatigue and ill health, increase in nursing facilities, and, as already suggested, provision for the care of children out of school hours.

In conclusion, I desire to pay tribute to the organizations which Dr. Jenks represents, and to Judge Brown's court in Philadelphia, which I believe has been the means of very much good.

Dr. Edward L. Bauer (Philadelphia, Pa.): One of the points in the discussion of Dr. Jenks' paper which comes to my mind is the possibility of dispensing with the institutional care of infants. Dr. Jenks has shown the ideal in placing these children in homes, and Dr. Bradley has gone one step further and offers the babies to all of our homes. Will we have enough homes to go around where these children will be acceptable, and do we not have another duty to perform to make these infant homes institutions that can well represent us and do the work economically for us? I do not know very many of them to whom I would care to entrust children, but there are some that have possibilities. I am afraid that if we take up the matter of individual homes too rapidly we will dispose of institutions that are a very necessary factor in carrying out good work with children.

May I state that I think that Dr. Bacon's work is probably as much a prophylaxis in dealing with the problem from an economic standpoint as anything we are doing. The supervision of the babies, the regulation of the budget, etc., in families, is going to save a great deal of the poverty and penury that will bring about just what Dr. Jenks and his coworkers are trying to ameliorate.

Dr. William N. Bradley (Philadelphia): I should just like to reply to Dr. Bauer. I am not at all a believer in institutions for children. The principal reason is that boards of management of the institutions cannot be controlled; you cannot educate them up to do the right thing for the child. If you can get an institution with plenty of money and plenty of ground, and can organize it, you may have a few homes on these grounds for small groups of children. But as the institutions are run to-day, I am absolutely opposed to institutional care for children. There is a lack of intelligence and willingness to do on the part of the boards of management, which fails to accomplish the best results for the child.

Dr. Percival Nicholson (Ardmore, Pa.): I wish to express a sense of appreciation for the stupendous work and the magnificent manner in which it has been accomplished. From what I have seen, there are very few hospitals wherein such extensive infant and child care is available. I do not think the cases receive such extensive, careful and exhaustive examinations as have been done by Dr. Jenks. Another thing that is very important is to realize that while we have to have hospitals, a child in a hospital after a certain stage begins to do poorly. This same child where it can get the individual mother's attention begins to improve and terminates as a successful case. This work is wonderful and the work that they are proposing to carry

out is increasing in its scope tremendously, and I think few of us realize what is really being accomplished.

DR. EDWARD L. BAUER (Philadelphia): I should like to hear other opinions on institutional care of babies, since a large sum of money is almost within my grasp to build such a place.

DR. JOHN F. SINCLAIR (Philadelphia, Pa.): I am in thorough accord with Dr. Bradley. The board of managers do not have any vision, they do not live up to the responsibilities that are placed upon them, and the institutions are sadly lacking in those things necessary for the care of children. That is true not only of the denominational but all nondenominational institutions. There is only one institution in Philadelphia of which I know of that in any way begins to approach the ideal, and yet that is far from satisfactory to those of us who have been thinking about this a great deal.

DR. JENKS (in closing): Of course I am in favor of placing children in individual homes. I do not believe we can get the results with a large number of children together under the present standards of institutional management that we can get in individual homes where you can have the personal contact with the foster mother. It has been a large part of our work to try and educate, to try and find a class of foster mothers who will be at least approaching the ideal of what we should like to have or what children should have in their own homes. That, of course, is hard to find. That causes a constant blocking of our work. We cannot find enough homes to satisfy the demand for the number of children who apply for our care. We cannot begin to take all the children that societies want us to take, and that is the practical application at present of what Dr. Bauer says. We should have to have institutions for many years to come, but I think the aim should be to get these children into a home where there are at least not more than three children, and preferably not more than one. In our baby homes we try not to have more than one baby in a home.

When difficult feeding cases come to us they are at once sent to a home about eight miles out in the country under the care of two trained nurses who have two helpers. For each of these babies the society pays the sum of $10.00 a week. You cannot get a good foster home for $1.00 or $1.50 a week. You have to pay a decent wage. The Children's Aid Society, covering the eastern half of the state, pays from $3.50 up. Most of the Children's Bureau homes, where we have a large number of babies, pay $8.00 to $10.00 a week; and in addition to that we supply the scales and extra feeding for any of the more complicated baby formulas.

PREVENTABLE AND CORRECTIBLE DEFORMITIES OF CHILDHOOD*

EBEN W. FISKE, A.M., M.D.
PITTSBURGH, PA.

The deformities of children, while essentially an orthopedic problem, cannot fail to interest those of the profession who first observe them; namely, the obstetrician, the pediatrician, and the general practitioner. With them must rest the responsibility of early detection and early treatment; to them must come the realization that no degree of skillful mechanical or surgical after-care can balance the beneficial effect of immediate, though simple, measures.

Physical deformities seen in infancy and childhood may be generally classified as congenital and acquired. The former are not preventable, but a very large percentage are correctible or subject to much improvement. The acquired deformities, on the other hand, are almost wholly preventable, and, once established, are also subject to correction. The logical inference from the foregoing is that deformity, per se, is largely unnecessary, inexcusable, and a stigma on the medical community where abundantly found. The continuous and alarming frequency of untreated or inadequately treated preventable and correctible deformities would seem to justify a brief review of the subject.

A consideration of the problem of deformity also involves that of loss of, or interference with, function. The two are coexistent and interdependent. Function depends primarily on restoration of form, while the latter underlies physical mechanics. Modern treatment does not terminate with correction of deformity, for, of the two, functional restoration is the more important. Primary measures for functional results are, however, more pertinent in the treatment of adults (as in war or industrial injuries) than in children, where we are favored by the inherent tendency of youth, aided by growth, to reacquire normal use if the underlying form is at all propitious. For the child, deformity is the fundamental problem, if concomitant functional impairment and improvement are never overlooked.

Practically all acquired deformity may be considered preventable, except in cases of serious loss of tissue, such as would produce inevitable shortening. In general, such prevention may be accomplished by:

1. Early protective or prophylactic splinting, along the following principles:

a. Maintenance of the proper functional position of limbs and joints.

b. Protection or relaxation of weak or paralyzed muscles, and overstretching of overstrong muscles.

c. Prevention of scar tissue contraction.

2. Physiotherapeutic measures, involving the use of open splints and early motion where continuous fixation is essential.

3. Correction of faulty habits of locomotion, attitudes and posture in lying, sitting and standing, and environmental influences.

The essence of all these measures is foresight; nowhere is the "ounce of prevention" more important. Incidentally such preventive methods, especially splinting, often comprise the fundamental therapeutic agents, thereby accomplishing

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both purposes. A few specific examples of these measures in the commoner deformities may be cited.

a. *Paralytic conditions.*—The deformity or tendency to deformity is the result of a muscular imbalance, the relative overbalancing by a spastic muscle of its weaker normal opponent, as in the cerebral palsies, or by the stronger normal muscle of its weaker paralyzed opponent, as in the flaccid types, notably anterior poliomyelitis. At no time in the very early stages of these paralyses is it difficult to place the limbs in an absolutely straight position, and so maintain them, by the simplest splints or plaster. In general, the lower limb should be held with the hip and knee extended, and the foot in right-angled dorsiflexion. The upper limb should be placed in an abduction or aëroplane splint if the shoulder (usually the deltoid) is involved, the elbow should be in partial flexion and semisupination, the wrist in moderate dorsiflexion and the fingers semiflexed. If the trunk is involved, recumbency on a Bradford frame is the best method at first. For the specific case, however, the rule should always be to relax the weakened muscle and over-stretch the strong opponent, wherever found. There is nothing new about this principle; it is the failure to apply it universally and at the proper time that warrants comment.

Certainly, in infantile paralysis, we have the most striking example of the astounding difference in results between cases receiving early prophylaxis and those which have been neglected, or even postponed. It may be said with little fear of contradiction that the development of a deformity is inexcusable in a properly observed case; in other words, deformity is one hundred per cent preventable. Rest is the cardinal treatment in the acute stage. It may be best accomplished by simple light splints. These hold the limbs straight, and at about three months, when deformities tend to develop, they have been anticipated and arrested. The same principle is carried through the convalescent stage with suitable braces. The tendency to lie, sit or creep in positions which favor deformity is noted and checked. Meanwhile, the paralyzed muscles, held in relaxation, have been offered the maximum opportunity for the return of power, and have undoubtedly responded. What degrees of permanent deformity, involving marked structural change, of hopeless paralysis and atrophy, of endless and extensive operations and after-care, and of lifelong crippling, a very little foresight and knowledge may prevent!

b. *Joint disease.*—Here deformity is apt to exist in the early case, if acute, but is due to muscular spasm. The latter is largely eliminated by proper fixation or traction applied to the joint, so that it is rarely a factor in producing permanent deformity. If the course of the disease is such that ankylosis must ensue, it is usually possible at some stage in treatment to place the joint in its best functional position for ankylosis. The value of this is obvious; its neglect greatly increases the ultimate impairment. Secondary deformities, such as those produced by gravity, and extra-articular retraction, must also be foreseen and prevented.

c. *Extensive wounds.*—In these, deformity occurs from loss of tissue involving muscles and nerves, which are productive of a loss of balance between the opposing neuromuscular mechanisms of a limb, or by contracting wound granulations. This is particularly true in suppurating wounds of long standing, such as extensive osteomyelitis, where the attention is focused on the primary condition. Here the functional end-result will depend as much on the position of the parts as on the integrity of the tissues; in fact, the healing of the wound is often of secondary importance. A modicum of prophylactic splinting will readily anticipate these unwelcome complications.

d. *Fractures.*—Much could be said here of both primary and secondary deformities, but time forbids. The modern treatment is very largely designed to favor observation and care of such unfavorable tendencies by the use of open traction splints, overhead suspension, and free mobility of the patient. Add to this very early though mild physiotherapeutic measures, such as massage of muscles and gentle movements of the joints, and we have automatically reduced unfortunate results in form and functions to a respectable percentage.

e. *Static conditions.*—This is again a large subject, but a very important one from the standpoint of prophylaxis. Necessarily, most of the work which has been done for static and postural defects in both adults and children has been corrective. Nevertheless, such treatment is essentially preventive, as both primary and secondary factors in these conditions tend to increase rapidly. The developments and sequelae of faulty posture in the child, as affecting both the external and internal physical mechanism, are a serious menace to the health and efficiency of the adult. Probably 75 per cent. or more of school children exhibit static defects. Moreover, a very large proportion of orthopedic conditions seen in adult practice are avoidable if seen early. The conclusion is obvious. Add to this the complications and chronic diseases following in the train of lowered muscular tone and visceroptosis, and we find indications

enough for the early detection of static faults.

The outstanding difficulty, however, in early diagnosis of the milder postural case is that the child has no complaint, the parent is oblivious, and the physician is not consulted. These conditions can be best checked up systematically in the school, but only by a properly trained observer. The detection of round shoulders, hollow back, protuberant abdomen, uneven hips or shoulders, knock knees, bowlegs and pronated feet, is simple if systematic, and the same may be said of treatment. Properly conducted group exercises, postural training in standing and sitting, and supervision of clothing and improper habits, will produce remarkable results for the majority. The more advanced case, with definitely atonic muscles and established deformity, will demand individual attention, special exercises and braces. It is in this type of case that the coöperation of pediatrician and orthopedist is most urgent. The individual soon exhibits symptoms which, arising from the same causes, call for both medical and mechanical treatment. The conscientious practitioner will readily detect such origins of later disease and disability, and take immediate steps to remedy them. He will not dismiss the apparently slight mal-alinement with the oft-heard remark, "It will be outgrown."

The subject of correction of deformity is, however, more extensive and diverse, and forbids detailed consideration. One may only point to the present unlimited possibilities of operative and nonoperative measures, to the achievements of plastic and cosmetic surgery, to tissue transfer and transplantation, to structural realinement through readjustment of tendons, ligaments and bones, to manipulative redressment, to corrective fixation, and to efficient physiotherapy, combined with the foregoing. Briefly, of the congenital deformities, the commonest are clubfoot, hip dislocations, torticollis, and defects of the limbs, all varieties of the first three being practically curable, at least from the standpoint of noticeable deformity and interference with function. The essential principles in the correction of congenital clubfoot are three; namely, to begin treatment in the first or second week of life, to avoid undue traumatism and operation, and to persist in maintaining an overcorrection of the foot until the deformity has been safely eliminated by normal weight-bearing. The importance of starting with the soft plastic foot of the infant and correcting the deformity before time has produced abnormal growth and rigidity seems obvious, yet the policy of delay is still observed. The avoidance of trauma, by conservative, nonoperative methods, is of fundamental importance because it is rarely necessary to cut or wrench the foot when treatment is begun early, the whole foot is treated instead of isolated elements in the deformity, and all structures are preserved intact for future function. The results in large numbers of cases firmly attest these facts. Here again, as we see these cases at birth or soon after, let us remember that delay is a certain menace to recovery.

Congenital dislocation of the hips is reducible in the majority of cases by the manipulative or closed method. Intractable cases require operation, but bloodless reduction should be first attempted. The best ages for successful results are from two and a half to five years. Torticollis is readily cured by operative division of the short muscles, followed by continuous fixation in overcorrection. Much can be done with congenital deformities of the limbs, due to the absence or failure of development of a long bone, by operative straightening, bone grafting and bone lengthening. Apparatus to support these limbs and allow walking is very essential, and while normal length or function cannot always be assured, we can at least correct the alinement and favor growth by functional weight-bearing. Such cases should never be considered hopeless or be ruthlessly recommended for amputation.

Of the acquired deformities, those resulting from the paralyses are unfortunately preëminent. Prevention of the deformity having been neglected, immediate correction is indicated because every day serves to mould the tissues more firmly into their incorrect form and relations, increased by growth and often by faulty weight-bearing, and because the deformity is always toward the side of the strong muscles, relaxing them, and away from the weak, overstretching them, thus producing the most unfavorable conditions for repair, as previously noted. Manipulative or operative correction, followed by retention with plaster or brace, not only serves to straighten the limbs and restore the static line, but also offers once more the maximum opportunity for recovery of the paralyzed muscles. It is indeed a common occurrence to find unexpected muscle improvement following an operation to correct a long-standing structural deformity of the foot. In many cases, also, where the paralysis may be considered permanent and the indication for ultimate operative readjustment has arisen, the deformity must first be corrected and the limb held for a varying period to favor the return of the underlying structures, notably bones, joints and ligaments, to normal shape. A period of normal weight-

bearing in a light brace will then do much to restore normal relations throughout the entire static line and reduce the amount of disability to an unexpected degree.

Much or little may be said of the correction of deformities which are the result of traumatism, preventive methods having failed. The same principles of treatment hold here, as in other structural deformities, except that the work is often more difficult because of distortions from loss of tissue, and inflammatory or infectious complications. The correction of angulation, with particular attention to straight line muscle pull, proper joint mechanics, and preservation of the static line, are especially important. It is hard to conceive of a deformity of this type that is so bad it cannot be improved, from the functional as well as the cosmetic standpoint.

Static deformities have already been discussed under the subject of prevention. It must be remembered that these are due to two main factors, skeletal mal-alinement and muscular insufficiency, the latter predominating. Both are subject to correction, or more often to cure, if properly handled, and all such defects should be treated immediately and thoroughly when detected.

A word should be added regarding the application of treatment, especially the nonoperative. So much can be accomplished by various manipulative procedures, that there is often very little left for surgery, even in serious deformities. In the more acute cases, and in the absence of inflammation, forcible manipulation under an anesthetic, to break down soft callus and adhesions, stretch contracted ligaments and tendons, or reshape soft bone, possibly with the aid of an osteoclast or Thomas wrench, is alone necessary. For fixation after these measures, nothing serves the purpose so well as plaster of Paris, properly applied, and it may also be used for active correction, especially in sections for turn-buckle application or wedging. Splints and braces should be the lightest and simplest possible, for obvious reasons, and this precludes the heavy and expensive ready-made or store brace. Apparatus must be accurately fitted to the individual and adapted to his specific needs, and the brace-maker should stand in the same relation to the physician as the pharmacist. We do not ask the latter to prescribe, and the doctor who sends his patient to the shopman for treatment is negligent of his patient and his profession.

Lastly, mention should be made of the detection of deformity. Unfortunately, routine physical examinations as taught and made are very cursory as to skeletal defects and mal-alinements. Gross deformities and limps are readily observed; the minor or incipient case, often more important, is overlooked. The free use of the tape measure is somewhat of a remedy for this; a knowledge of normal joint movements and normal posture is invaluable. Attitude in standing, and gait, should never be neglected. There should be a routine for babies and infants, noting the position in lying, normal movements and muscular activity, the length of the legs, manipulation of the feet and larger joints, and examination of the spine. Many children would be spared serious physical defects in later life if this were oftener performed.

It is difficult to be precise as to the prognosis of deformities of childhood, as prognosis is in direct relation to the selection and efficacy of treatment. It is at least apparent that so much can be done that no case should be overlooked or postponed, and that both constructive and reconstructive orthopedic care offer definite relief to the great majority.

THE IMPORTANCE OF CLOSER OBSTETRIC AND PEDIATRIC RELATIONS*

JAMES K. EVERHART, M.D.
PITTSBURGH, PA.

Whether the appeal be made to physicians or to laymen, the welfare of the infant brings a particular interest. Especially is this true with those of us who are engaged in child care and in child conservation.

The earliest prenatal care marks the beginning of infant welfare. The importance of prenatal care is well stated by Griffith, when he says, "It follows that the condition of the mother's health and her methods of living cannot fail to exert a great influence upon the health of the fetus, and, indeed, upon the whole later existence of the child." Since prenatal care is a problem for the obstetrician, the responsibility is also his of bringing a healthy baby, in so far as is possible. Maternal and fetal care are so inseparable that attention given to the mother reacts directly upon her child.

During the prenatal period not infrequently the obstetrician comes into knowledge of many facts which relate definitely to the care of the infant after birth. As an instance, I need only mention lues of the mother. All this information should be given freely to those responsible for the child's subsequent care.

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The interdependence of various lines of medical work is generally acknowledged. We know that this grouping of interests or specialties, whether it be between internist and surgeon, aurist, dentist, oculist or others engaged in special work, has developed because the patient thus is best served. With the growth of medical specialties has come the realization that, in many instances, the best care can be given the patient by those whose training, thought and work particularly fit them for the task. Despite the recognition accorded pediatrics as a specialty, neither pediatrists nor obstetricians yet seem to understand the full value of closer relations. There is an interdependence between these two specialties which, if established, can help both of us in our dealings with the newborn. In other words, closer working relations will be advantageous both to ourselves and to the child.

His training and his work naturally center the obstetrician's interest in the mother, the infant becoming a matter of secondary concern. On the other hand, the pediatrist is primarily interested in the child. The one thinks largely in terms of the infant, the other in terms of the mother. In so far as the infant is concerned, with its delivery and its immediate subsequent care, the responsibilities and the duties of the obstetrician should end.

We recognize the importance of the mother as a member of society. Economically and sociologically, during the period of pregnancy and parturition she deserves the best care and consideration at the hands of those thoroughly trained in that work—the obstetricians.

However, we must also recognize the fact that the mother attains her importance in society through her ability to perpetuate the race, and having done so, her child rightfully places an equally strong claim for care and attention upon those best fitted to look after him—the pediatrists. It probably is not an exaggeration to say that in *a great many instances,* after the first care is given to the newborn infant, the obstetrician is but little concerned about him. To be sure, he wants the infant to get along, and will do what he can to that end, but his first interest lies with the mother, and naturally so. To the mother is extended a great deal; to the infant, only too often, very little. A confession made by one of my obstetrical friends, was that "he rarely followed his babies." Not wilfully are these babies neglected, but the obstetrician is not particularly interested in the baby as one of his problems, and he can scarcely be expected to become a trained obstetrician and pediatrist besides.

On all sides we hear much about health conservation, and we emphasize its value. While sickness and accident are more dramatic than the various aspects of health conservation, we realize that a great deal is to be gained by studying the baby from a health point of view. Prenatal care is the first step in conserving child life. Nutrition clinics, children's health centers with health classes for infants and children, and welfare clinics may seem a logical second step in this broad program, but between prenatal care and welfare clinics for infants and children, is a gap to be bridged; namely, the first weeks of the infant's life. Litzenberg has termed this period "a sort of no-man's land," a period which may be claimed by both specialties. However, it must be admitted that pediatrics of the newborn has very little in common with obstetrics and very much in common with pediatrics.

This "newborn pediatrics," a field much neglected, offers fertile soil for investigation. The problems to be solved are many. The obstetrician can scarcely solve them, for the baby very soon passes from his care and observation. Many times the pediatrist is handicapped from his lack of knowledge of conditions existing during the intra-uterine period. The information which the obstetrician alone can give may be of inestimable value in later months and years. This in itself would seem to offer sufficient reason for coöperation.

Since upon the institution of proper feeding so much depends, it is essential that correct feeding habits be established as early as possible. The importance of breast feeding need not be emphasized here. Notwithstanding our realization of this, only too frequently a ready acquiescence is given to too early weaning, with no absolute indication for it. All of us have seen this, many times with unfortunate results. The obstetrician must share a part of this blame. The first prophylactic step in the care of the infant is proper feeding. To the pediatrist, as to no one else, is submitted the evidence of improper feeding. Were correct feeding habits established at birth, and continuously carried out under proper supervision, many of the wrecks we encounter after the third month, never would be seen. Not infrequently the obstetrician, unwittingly, is responsible, for at his suggestion certain formulae are early begun. Early infancy being a rapidly changing period of life, a food suitable at two weeks, becomes inadequate at one month or six weeks. Not realizing the necessity for changing the food, nor having been instructed to change, mothers frequently continue to feed their babies these insufficient

formulae and sometimes bring about a much disturbed state of nutrition. Whether complemental, supplemental or entire bottle feeding be established, to the pediatrist should be given this responsibility, for a dual reason: first, because his training best qualifies him for it, and second, because the obstetrician oversees the feeding for a limited time only. Is it not more desirable from the standpoint of the child, to have so important a program begun by the one who ultimately assumes charge of the infant?

The obstetrician carefully observes the mother for a period of weeks following her delivery. His interest in and supervision of the infant rarely extend beyond the second week, seemingly justifying the statement (credited to one writer), that to the obstetrician "the baby is only a by-product of obstetrics." Were there no other, this one problem of infant feeding, with the importance of a proper beginning, and its far-reaching results, gives sufficient reason for early coöperation.

Especially desirable is this closer relationship in hospitals and in teaching clinics. There is perhaps no class of patients with whom the young physician feels more helpless than in his dealings with infants. The reason for this is evident. During his student work his relations are largely with the adult. His opportunities for observing the newborn and the very young infant are so limited that he acquires neither experience nor confidence in their care. During his obstetrical service he finds emphasis placed upon the care of the mother. The infant in many instances is not given close attention. The result is that the medical student and the interne come to look upon pregnancy and its conclusion as a process in which the mother alone is to be considered, with the product of pregnancy often lost sight of in the anxiety to do so much for the mother. With a closer relationship established, in which the pediatrist is called upon to assume full charge of the baby immediately after birth, both student and interne will regard the infant as an object worthy of considerably more care than frequently is given.

The interne year very wisely has been made a part of the requirements for medical practice. No longer is there doubt as to the wisdom of this provision. During this period of training not only does the young physician have the opportunity to observe the actual working of his theoretical knowledge, but he also is trained in new fields of work. With closer working relations between obstetrics and pediatrics the infants in our hospitals will be better cared for and there will be organized facilities for better training of our internes in this important work. As conducted at present, in most institutions the newborn service does not give the interne adequate training. Only too frequently the relative care bestowed upon infants and adults is in direct proportion to the sizes of their bodies. As a result, the young physician many times reaches the threshold of his medical practice insufficiently equipped for one of the most important parts of his work.

In our own state are sixty-three "full credit" hospitals. In every one of these there is a well equipped obstetrical department and I also take it, a pediatric department. With active coöperation in all of them there would go out annually a large number of medical men better fitted to cope with the problems of the newborn. It is a safe assertion that with better trained doctors both morbidity and mortality in early infancy can be decreased. I am well aware that in the consideration of infant morbidity and infant mortality there are many other questions involved than medical care. With the economic and the social aspects we are not at this time directly concerned. The family physician, in his close relations, can do much to shape the care of the infant, and to do it properly he must understand child care. Oftentimes he is the only one who comes into direct medical contact with the infant, so that a peculiar obligation is his, that of keeping the child well. Sometimes he fails in his obligations from lack of interest or from lack of knowledge. To those of us, therefore, who have the opportunity, comes the responsibility of better training for our internes, that they may more fully understand the problems of infancy.

Let it be understood that the services of the trained pediatrist are not always necessary in the care of the newborn, nor are they everywhere available. *Better* pediatric care is essential, and this will be supplied with better medical training, following the suggestions just given.

A splendid opportunity is offered obstetricians in advising mothers of the importance and the value of continuous medical supervision of the infant during the first year of life. Only to the occasional mother is given the ability, the confidence and the knowledge to carry her baby, unaided by competent advisors, through this stormy period in safety.

How may the obstetrician and the pediatrist work more closely together for the good of the child? In the first place we believe the infant's interests will be best served if, in our own hospitals immediately after birth, the infant be admitted as a pediatric patient and the pediatrist be placed in full care of the child. Of inestimable value

will be the records and other information given by the obstetrician. In taking full charge at birth the pediatrist is given the opportunity for intensive study of the affections of the newborn and for the establishment of medical prophylaxis at the earliest moment. One of the most ardent advocates of this plan, Dr. Jennings C. Litzenberg, of Minneapolis, has this to say of it: "After eight years we find that experience has confirmed our theories. We admit that the babies are better cared for and many problems of the newborn are being studied which we would not have had the time nor the inclination to undertake. I thoroughly believed, when we made this change, that the pediatrist would take better care of the baby, and I am glad to say that experience has proved this to be true." In outpatient departments the work may be assigned to senior students under the supervision of junior assistants, the latter being responsible to the chief of the pediatric service.

The benefits from this closer relationship may be summed up, briefly, as follows: The efficiency of each specialty will be increased, by giving to each its own particular problems. The general practitioner will be better trained in a work with which he frequently feels so unfamiliar. The infant will be better cared for.

Highland Building.

DISCUSSION

DR. WILLIAM N. BRADLEY (Philadelphia, Pa.): This is a very timely paper and I have nothing to add. I simply want to confirm and support all that Dr. Everhart has said. I think when the cord is cut the baby belongs to pediatrics. Dr. Everhart's experience has been my experience with maternity hospitals—the baby is turned over to the resident or to the head nurse for feeding.

DR. J. DONALD IAMS (Pittsburgh, Pa.): I have very few words to say, except that in the hospital with which I am connected for some years we have carried out just the plan that Dr. Everhart outlined. As soon as the baby is born it is turned over to me, and the entire supervision of that child is in my care. I have access to all of the records of the obstetrician and I superintend the hours of feeding and whatever other care is necessary. There is thorough coöperation, the plan works beautifully, and I am sure the hospital would not give it up for anything.

DR. G. VICTOR JANVIER (Lansdowne, Pa.): There are two or three little points in this valuable paper I should like to emphasize. I consider it the greatest crime to give the newborn infant sweet condensed milk, so that later it refuses the less tasty milk of the mother. As one of the humble workers in the obstetric camp, appearing before the gods of pediatrics today, I would say that I am using in my own practice, a prenatal diet for the mother, of corn meal mush, other cereals, milk, vegetables and fruit. I tell the mother she doesn't need anything else; she doesn't need meat, eggs, tubers, etc. If she lives on the former diet she will get through without an overgrown, fat baby. I think I can personally face Dr. Bradley with a clear conscience and without the veil of charity being drawn over my face, as I never allow nurse or mother to give the baby anything but plain water until the milk comes in. If the mother's milk doesn't come early, I call in my good friend the pediatrician to help me and advise the correct feeding.

Why is it that the other University of Pennsylvania courses are not made attractive for us, like Clark's and B. C. Hirst's clinics? If the medical side of the house and the pediatric side of the house would give an attractive course such as the above mentioned give us, the clinics would be crowded every day. That is simply a thought.

Again, we hear that the pediatrician should be called in as soon as the baby is born. Those of us who are not treading the Olympian Heights with the gods of obstetrics and pediatrics, and who have still to work among the poorer classes, can't call in the pediatrician at once. Personally, in my better class of patients, I am quick to call for help as an obstetrician, as soon as I need it.

Another great mistake the average physician still makes (and I would apologize for my confreres) is feeding babies every two hours. They follow out the old idea for the same reason that they persist in putting forceps on a posterior chin. For the same reason they will feed a baby every two hours because it has been done year after year. I would protest and would say I never feed my babies oftener than every three hours. I tell the mother, after confinement, "Eat everything and anything you want to build up your milk, and don't diet yourself. Make up your mind you are going to feed that baby every four hours," and the child's digestive economy will soon adjust itself to any sensible food intake. I am trying to do my duty from the standpoint of the teacher, the general practitioner, and from the standpoint of the obstetrician.

DR. J. L. FOSTER (Blawnox, Pa.): I just want to say a word about the possibility of teaching the students and internes something more about children's diseases. It is a little hard for me to say what I want to say because there are two of my old teachers present; but no doubt the fact that we did not get more training in children's diseases was not their fault. The pediatricians should take more part in the medical course.

Dr. Litchfield said one day this week that the time would possibly come when they would put bacteriology, pathology and allied sciences in another sphere and teach them to men who did not have a medical degree. When I think of the hot afternoons three or four times a week that we were compelled to spend in making drawings of sections of the liver, kidneys and other things we have scarcely seen or heard about since, and when we got out into general practice and the first cases we saw were cases that we did not know anything about and had never seen a practical case, I appreciate very much the remarks that Dr. Everhart made. And I do make a plea, although we who are out of school now cannot be helped, to help the men who are the coming practitioners, for the pediatricians to take their own part in arranging a curriculum and try to have a fair portion of the time given to their department and not mostly to the other departments. If they can do that the men are going to benefit by it.

DR. HAROLD R. MIXSELL (New York City): We have in New York the rather unusual situation of having two services under one roof—the obstetrical side and the pediatric side. In the past three years we have correlated the two very nicely. The minute the baby is born we receive it and examine it thoroughly

with the obstetrician. After that, every day, daily rounds are made by the attending physician on the pediatric side with the obstetric interne and the pediatric interne, and the feeding is regulated. The child is re-examined weekly until it goes out. Of course, these are the clinical patients primarily. After that, in two weeks' time they are directed to come back to the clinic, where they are seen once a week for the first three months of life; every two weeks for the second three months of life, and then once a month for the second six months. After that they are seen every three months and then twice a year. In that way we keep in touch with them. We not only examine the babies, but we attempt to teach the obstetrical interne and the pediatric interne certain facts about the feeding of infants and their care, and the diseases to which they are exposed. In addition, we feel that that particular time of life is very important, the first two or three weeks being too much neglected, when we consider all the diseases which babies can have, which should be studied and which have not been studied, such as syphilis, hemorrhage of the newborn, sepsis, etc., and all those diseases about which we know very little at the present writing. For that reason we have attempted this correlation. We have done it for the past three years, and are now beginning to get something out of it. The same thing is being done in the Sloane Hospital by the attending pediatrists, although they do not go into it quite as intensively as we do because they are not making daily rounds.

Dr. Walter S. Brenholtz (Williamsport, Pa.): As a general practitioner, and not as a pediatrician, I feel like saying a few words on this subject for two reasons: In the first place, a short time ago at a meeting of our county medical society, the secretary of this section made the statement that we were pretty good obstetricians but very poor pediatricians. Of course, he hit us all, I suppose, but while the essayist who has brought out the need for a closer association between the obstetrician and the pediatrician is right and should serve a useful purpose, yet in my mind he seems to have left the impression that when the cord is cut, the general practitioner in his obstetrical work ceases his care, observation and treatment of the baby. That has not been my experience and I do not believe that it is the experience of the general practitioner as a rule.

Calling in of the pediatrician as soon as the cord is cut is no doubt very good practice in hospital work, especially public ward work, but when you come to private practice, except most likely among the wealthy, it cannot be carried out.

In the training of internes, the close association between the pediatrician from the time the cord is cut, with the work of the obstetrician is very good, and will, as it is being carried out, according to the remarks that have been made here this morning, serve a very useful purpose by making a good pediatrician as well as a good obstetrician out of every general practitioner, and I hope that in the very near future your section secretary will be compelled to take back his statement made on that previous occasion.

Now, in general practice it is necessary for those doing obstetrical work, to take care of the babies also, and I believe as a general rule, they do; and although we do not pretend to know as much about the care of and treatment of babies as those men who have made a special study of that particular branch of medicine, I do not believe that the babies are neglected to the extent that the reader of this paper would seem to infer.

Dr. Everhart (in closing): I should like to emphasize one thing I said: It is not always necessary for the *trained* pediatrist to see these children, nor is it always possible to get the services of the trained pediatrist, but better pediatric service is desirable. I believe the obstetricians themselves would welcome this change, for it would give them a great deal more time for their own problems. That in itself would seem a sufficient reason for their dropping the care of the infant and I honestly believe most of them are willing to do so. It is simply a "hang-over" from one medical generation to the next. Because it always has been done seems to justify its continuation. Some obstetricians tell me they are quite willing to accept this change. Whether or not in actual practice they would welcome it, remains to be seen.

There is also the financial side to be considered. The obstetrician cannot say in every instance, "I do nothing with the baby; I shall have to turn it over to a pediatrist." Many times the family cannot afford to employ a number of physicians.

Better pediatrics with the newborn is the plea I make and the condition I should like to see brought about. As for feeding babies every two hours, that in itself simply strengthens the argument for making the change.

ATYPICAL MASTOIDITIS*

MATTHEW S. ERSNER, M.D.†

PHILADELPHIA, PA.

The subject of atypical mastoiditis assigned to me is of extreme interest and every case is a problem in itself.

There is no definite pathognomonic sign upon which we can place our finger and state definitely that this is an expression of an atypical mastoid. It is upon the corroboration of many facts gathered from the history and the laboratory data, plus the general symptoms present, that we base our diagnosis. Often a thought creeps into one's mind that the diagnosis is intuitive, although one should fear the thought, because it is not based on scientific data. Since, however, the expression is current that the school of experience dictates to us, then it is simply the higher sense of development of the physician when he passes through his metamorphosis in the school of experience that often makes him sense the invisible and abstract conditions and interpret them into concrete facts. The consultant then, although often sneered at, should be classed amongst the supermen on account of his keenness in interpreting the obscure factors into realities. I do not know what I would have done without my dear beloved friend and chief Dr. Coates. His keen observation and sound judgments have carried me through many a dilemma.

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†Consultant Otolaryngologist to the Jewish Maternity Hospital; Associate Professor in Otology, postgraduate Department, University of Pennsylvania.

In the condition of atypical mastoiditis, which is often so puzzling, we find a pathological picture superimposed upon a pathological condition, absolutely devoid of certain set syndromic symptoms that should be present in an ordinary case of mastoiditis. In fact the "atypical mastoid" is the anarchist in the category of mastoid disease. In order to make a definite diagnosis, one must use all facilities available, and even at that, in many instances the conclusions are reached only by the school of experience.

I have thought it best to make a brief outline of our methods of examination and show you how we come to our conclusions.

1. The Subjective symptoms.
2. The Objective symptoms.
3. The Hearing Tests.
4. Laboratory studies and findings.

1. SUBJECTIVE SYMPTOMS:

A full detailed history is most important. I have always made it a practice to allow the patient to speak for her or himself. My reason for doing this is not to influence the patient by my questions. Once the patient's little speech is completed, I filter the conversation and try to boil it down to a few essential points. I find this procedure most helpful. Each patient has his own little story and if not disturbed will almost in chronological order deliver the history, and by secondary questioning certain points can be obtained which will clear the history in its different phases. Now let us analyze what we may learn from the local subjective symptoms.

(a) *Pain* (It is commonly known amongst the laity that ear pain can hardly be exceeded in severity by any other pain in the body), its onset, duration, type, whether lancinating or dull, permanent or intermittent, whether worse during the day or at night, location (either over the auricle, tragus or postauricular region. This is especially important in adults from whom a reliable history can be obtained).

(b) *Discharge or otorrhea,* time of onset, duration, character and quantity of discharge, and cessation of discharge.

(c) *General subjective symptoms:* From the general history, we can determine the primary disease, whether it be an acute infection, the exanthemata or an ordinary rhinitis, tonsillitis or traumatic otitis media. It is also important to learn the date of onset and any other of the general symptoms that might have been present during the initial attack.

During my years of practice, I have had quite a few cases, which I will quote later, of patients afflicted with acute infectious diseases, whose temperature rose during the progress of convalescence, where the fever was overlooked by the family physician. He explained the symptoms as due to a recrudescence of the primary infection and it was not until the family became alarmed and various consultants were called, that the atypical "mastoid" was found.

2. OBJECTIVE SYMPTOMS:

(a) *Examination of the ears* to determine whether there is any discharge, character of discharge and quantity of discharge. If there is a great deal of discharge, we know it must come from some source other than the middle ear. Under the character of discharge, we must note whether it is of mucoid consistency, as this probably denotes eustachian disease. The other secretions vary in color, consistency and quantity.

(b) *Ear drum examination;* location of the perforation. Central perforation is invariably spontaneous. Perforation in the inferior quadrant is often significant of necrosis along the jugular bulb. A perforation in Shrapnell's membrane is suggestive of necrosis in the attic. Resiliency of the ear drum, whether tense or relaxed, is especially important to note. When there is relaxation in the superior posterior portion (membrana propria) or a nipple-shaped ear perforation with a history of repeated paracentesis, in our experience we have always found it to be a precursor of mastoid disease. Also note whether the middle ear secretions are under tension. If so, it means either that the pus is too thick, the secretions are over abundant, or the opening in the ear drum is too small to accommodate the drainage of pus.

(c) *Postauricular examination:* (1) On inspection, examine the position of the auricle for any displacement and compare it with the normal ear; also examine the postauricular folds. This is best accomplished by counting the folds on the normal ear and comparing them with the diseased side. Normally there should be at least two or three postauricular creases. We should at this time note whether any facial palsy is present.

(2) Palpation: Determine whether there is free mobility of the skin and periosteum over the mastoid; whether there is any thickening of the tissues overlying the mastoid. It is also important to determine the tender points, such as, over the antrum, tip of the mastoid, emissary vein, or over the zygomatic ridge. Determine whether the pain on pressure is superficial or deep. In the acute mastoiditis the pain is superficial, while in the atypical mastoid the pain may be either deep or superficial. We have learned from the number of mastoid operations performed under local anesthesia, that once we have incised through the skin and the periosteum

there is absolutely no pain. Therefore, during the onset, the tenderness is superficial and is due to a periostitis. Once the acute symptoms have subsided and the periosteum becomes thickened our pain becomes deep-seated instead of being superficial.

In infants the symptoms are objective. I have made it a practice to undress the babies completely. No infant is happier than when completely undressed, allowing free mobility of the upper and lower extremities.

I begin palpation in a remote region of the skull, observing at the same time the various facial expressions and limb movements of the infant. I gradually approach the suspicious area, palpating at first lightly and noting the infant's responses. We soon hear an outburst of cries with exaggerated contortions and mechanical movements of the child's hands towards the affected ear. If both sides are affected, there will be a confusion of muscular movements with an attempt to pull the physician's hands away.

A few rules to bear in mind: Pain over the emissary vein is a positive indication of mastoiditis.

Pain over the zygomatic region, when furunculosis is excluded, means mastoiditis, especially in children. This, in my experience, I found to be true in about 60 or 70% of cases.

Antrum pain is practically always present when the acute symptoms are prevalent and is of no significance during the early stages of otitis media.

3. HEARING TESTS:

Whisper, spoken voice and tuning forks: A diminution of hearing is important and requires careful watching before organization of the fibrinous exudate takes place, which causes fixation of the ossicles and results in permanent obstructive deafness. We know that the Weber will lateralize to the bad ear in any obstructive deafness.

Recently a new tuning fork test was called to my attention by Mackenzie, which holds true, especially in adults, where there is a great deal of destruction of the mastoid cells, with fluid present. The Weber is lateralized to the side affected, but is diminished a few seconds (2 to 4 seconds) and at the same time the Schwabach is also diminished a few seconds. The paradox in this test is that the Schwabach indicates nerve deafness while the Weber points to a conductive deafness. This phenomenon the observer attributes to the fact that the liquid substance in the mastoid cells is not so good a conductor of sound as the normal air filled cells. This test should therefore be employed as an aid in obscure cases.

The general symptoms of the patient are as follows: Listlessness, torpidity, haziness of the conjunctiva, indisposition, ashen colored complexion, coated tongue, a pitiable face, and a general appearance of a low grade toxemia. The temperature may be normal and often it is about 99 to 100 degrees, but a great deal of stress should not be placed upon it. We have, however, some subjective symptoms under this heading, such as impaired hearing, tinnitus, insomnia, a feeling of fullness in the head, pain more marked at night and provoked during the atmospheric changes and general indisposition that we must heed.

4. LABORATORY STUDIES AND FINDINGS:

Examination of the smear should be made immediately after the paracentesis to see if the streptococcus mucosus is present. This is significant of mastoiditis, although a few atypical "mastoids" that I have had during the last year, revealed a streptococcus hemolyticus infection.

A high leukocyte count is significant of vital resistance, but the differential blood count is important, especially the polymorphonuclear leukocyte. The high percentage of the polymorphonuclear leukocyte count is significant of the severity of the infection.

In a study of twenty-five cases of blood relationship, I found that when the total leukocyte count was diminished and there was an increase in the polymorphonuclear percentage, the mastoid should be viewed with caution.

X-ray report: I find that the x-ray report is a most valued asset in the diagnosis of mastoid diseases, especially the atypical form. It is an important factor to know the x-ray man and the angles from which he photographs, and often we must be frank enough to ask him for a re-photograph if we are not satisfied with the plates.

I have always made it a rule not to read the report of any x-ray until I have first studied the plates myself, and as I read them I make notations and compare them with the report. It is true that there are many shadows to contend with and various infarcts to be accounted for.

Most of my mastoid work has been done at the Medico-Chirurgical Hospital and thus far our roentgenologic studies have signally aided us.

Different Types of Atypical Mastoiditis

1. PRIMARY MASTOIDITIS: Baby Evelyn Miller, age 15 months.

I was called in consultation by Dr. Lashman of Camden, N. J., 4-18-22. The history is as follows: On 4-11-22, baby took sick with tonsillitis and grip. On 4-15-22, throat condition cleared up, but the temperature was still persistent. April 17, 1922, Dr. Lash-

man noticed a postauricular edema on the left side, with pain upon manipulation. April 18, 1922, I examined the baby and found a bulging in the posterior superior wall. The baby was immediately taken to the hospital and was operated upon the same evening. Operation revealed a small perforation in the cortex. When the cortex was removed, there was a cavity, with complete destruction of the mastoid cells. The blood clot method was employed. Recovery was uneventful and the patient was discharged from the hospital at the end of the eighth day, and on the eleventh day the bandage was removed. On May 2d, I was again called by the family physician to see the baby, as he noticed a postauricular swelling of the right side. Examination of the right ear drum was negative. The child appeared healthy and playful. She was only cranky during the night. I sent the baby into the Polyclinic Hospital and mastoidectomy was performed May 3d. The leukocyte count was 10,400, the differential count showed polymorphonuclears 68%. Bacteriological report was staphylococcus albus and pneumococcus. There was a perforation in the cortex. Upon removal of the cortical layer, the cells were completely broken down. After removing the debris, I found an exposed sinus. At no time was there any temperature. The child made an uneventful recovery.

This is a typical "primary" case which belongs to the group of atypical "mastoids" where there was no discharge from the ear, and no middle ear symptoms in the right ear, although there was a congestion and luxation of the left ear drum, which was incised at the time of the operation. There are many theories explaining this phenomenon. The infection no doubt took place through the eustachian tube, secondary to the rhinitis and tonsillitis. When the symptoms are slight during this period, one is unable to state definitely whether the patient's vitality is at its best and is destroying the microörganisms as fast as they multiply, or if the microörganisms are not very virulent; but we must be alert and cognizant of the fact that such conditions do exist and operative interference must be instituted before general septicemia takes place by sinus thrombosis and brain abscess, as in the case related, where the sinus was exposed and the general symptoms were conspicuous by being absent.

2. ZYGOMATIC ATYPICAL MASTOIDITIS: Baby Martin Bennett, age 14 months.

When Baby Bennett was seen, he was running a temperature between 101 and 105. He was very restless and had a toxic appearance. Examination of the ears revealed a congested right ear drum with an apparently normal left ear drum. At first there was a swelling on both sides over the temporal muscles around the zygomatic region, which gradually moved downward opposite the tragus, resembling that of mumps. Paracentesis of the congested right ear drum was done and pus found. I sent the baby to the hospital, after deciding that the condition was not mumps, but at the same time taking all precautions. The temperature came down from 105 to 103 degrees and behaved like a typical septic temperature ranging between 99 and 103. The x-ray report was not helpful, although it revealed a haziness over both mastoids, but at no time did it show breaking down of the cells. Three leukocyte counts made ran between 18,000 to 25,000. I knew that I had a sick baby on my hands and something had to be done. On 3-14-22, I operated on the right ear, making the regular postauricular mastoid incision, stripping the auricle forward. To my surprise, I found a fistula through the zygoma anteriorly. The mastoid cortex was removed and a simple mastoid was performed. There was a slight breaking down of the cells. At this time, I decided to operate on the opposite side, although there was no otitis media present. The same condition was found as in the right ear—a perforation in the zygoma anteriorly.

3. DIABETIC ATYPICAL MASTOIDITIS WITH FACIAL PALSY: Mrs. M. Moses, aged 68, operation with local anesthesia, scopolamin morphin with 1% novocain.

On 2-1-22, I first saw the patient, who had been treated for the past two weeks for influenza. On the eighth day she developed otitis media with spontaneous rupture. On 2-1-22, the family became alarmed because facial paralysis developed and I was called in consultation by the family physician. I found a profuse aural discharge with complete sagging of the posterior superior canal wall. The temperature was normal. The leukocyte count was 11,000. Operation was performed the same day. I found an adherent periosteum with a thick cortex and complete necrosis of the tip, exposure of the sinus and a dehiscence of the inner plate. The facial palsy cleared up after three days. Bacteriological findings: Staphylococcus aureus, pseudo diphtheria, streptococci and some gram negative bacilli. The complete bacteriology was not worked out, as the test tube broke and we were unable to determine definitely the streptococci and gram negative bacilli. The only complication I had with this case was an infection of the tissues of the neck. There was 4½% sugar present in the urine.

4. BEZOLDS ABSCESS WITH MASTOIDITIS: Emma Jean Parker, age 3.

On 3-6-22, this child was referred to me, diagnosed as a case of Ludwig's angina. History of the case: During the early part of January, the child developed grip and after a few days the temperature subsided, with the right ear discharging. The suppuration continued until two weeks before I saw the child. The mother treated the child with home remedies, douching, etc. The discharging ear subsided for several days, but after that, the child began to ail and developed a temperature of 99 to 101. On 3-1-22, the mother noticed a slight swelling of the neck, which became progressively worse. On 3-6-22, I was called to see the child about 1 a.m. The child at this time had a temperature of 105 degrees. Examination of the ear drum revealed a blurring of the landmarks with a slight tendency to sagging of the posterior superior canal wall. The perforation had apparently healed, as no sign of it was visible. There was a loss of the postauricular folds and tenderness on deep palpation. Upon examination, I found a large mass extending from the tip of the mastoid along the angle of the jaw under the right side of the inferior maxilla, but upon palpation I did not find the typical hardness of the floor of the mouth. The history of this case is extremely interesting and important. We see that the initial stage antedated a suppuration of several months' duration, which suddenly ceased and apparently the ear condition cleared up. Several days afterward the swelling in the neck developed. Here we had a true Bezold's abscess which did not develop until the middle ear stopped discharging. The pus which was under tension was still forming and followed the

line of least resistance, and perforated through the tip of the mastoid into the tissues of the neck.

Operative findings: I found a thickened periosteum, a complete breaking down of the cells, with a perforation at the tip and a perisinus abscess. This patient made an uneventful recovery after the mastoidectomy was performed, but we had difficulty in clearing up the infection in the neck. The child was in the hospital for six weeks. The bacteriological findings from the mastoid were staphylococcus aureus and albus, with the pneumococcus as the predominant organism.

5. Atypical Mastoiditis With Loss of Hearing: Miss Betty Cooper, age 19.

On 3-1-22 I was called to see this patient. She had an acute maxillary sinusitis on the right side, which I drained and cleared up. Examination of the ears revealed a chronic suppurative otitis media on the left side with granulation tissue and practically a complete loss of hearing. At this time she complained of vague pains in the right ear with a feeling of fullness and slight impairment of hearing. I saw her daily, decongesting the nasal mucous membrance and applying shrinking solutions around the eustachian tube. Although the pain subsided, the fullness in the ear and impairment of hearing became progressively worse. There was complete loss of whisper and only 1½ to 2 feet of spoken voice. She complained of dull headaches over the right side and pain over the temporal region, and worried about the loss of hearing in the right ear, which previous to this ailment was the good ear. The right ear drum at no time showed any pathological changes. Fork tests: Loss of air conduction, Weber lateralized to the right and diminished 4 seconds as compared with my Weber, Schwabach diminished 6 seconds as compared with my ear. The temperature was normal, leukocyte 9,000, polymorphonuclears 85%. The patient looked sick and had a sallow toxic appearance; there was a loss of luster in the conjunctiva and a coated tongue, significant of a low grade infection. I found pain over the right mastoid on deep palpation and only one postauricular crease was present. There also was immobility of the skin and periosteum. X-ray examination revealed almost complete destruction of the right mastoid cells.

Operation: Thick periosteum very adherent with thick cortex and complete breaking down of the mastoid cells, substantiating the x-ray findings. I was unable to find the antrum and closed the wound by the blood clot method without any drainage. She made an uneventful recovery. On the third day, when the bandage was removed, she was able to hear a whispered voice at 2 feet and a spoken voice some 5 or 6 fect away. She now has perfect hearing in the right ear.

6. Atypical Mastoiditis With Intestinal Disturbance: Libby Pawnzer, age 15 months.

This child, when first seen, had a temperature of 104. She was very restless, groaned and looked ill. There was a history of intestinal disturbance with flatulence. One week previous to this date the baby was seen by a pediatrician who incised the right ear drum but there was no discharge. Five days later the left ear opened spontaneously. Examination of the ears revealed a sagging in the posterior superior canal wall of the left ear, with profuse discharge. The right ear drum revealed a linear incision with a thin serous discharge. I watched the baby for four days consecutively, without abatement of the symptoms. On 3-22-22, a postauricular examination disclosed one crease on the left side and 2½ creases on the right side. The baby was completely undressed, as described in the early part of the paper. I found that there was a slight thickening of the periosteum, and immobility of the skin over the left mastoid. I sent the baby into the Medico-Chirurgical Hospital and ordered both ears x-rayed, the reports returning negative. The pictures showed the semicircular canals in situ. The leukocyte count was 25,000. The mastoids were rephotographed three times and at no time could we make a definite diagnosis from the x-ray readings. I did, however, note that on palpation, especially on deep pressure over the left mastoid, the child made an attempt to pull my hands away, and her cries and contortions became more aggravated. On 3-25-22, although at this time there was some slight tenderness over the right mastoid, I decided to open the left mastoid and found it to be completely broken down. The temperature subsided and on the fourth day it reached normal. On the eighth day, I found both ears completely dry. The baby was discharged from the hospital 4-5-22. On the 15th of April, I again was called to see the baby, who was being attended by a pediatrician for the past five days, treating the intestinal tract. The same history of intestinal disturbance with flatulence was given and all our efforts were concentrated towards the intestinal tract.

Examination of both ears: I found the left ear dry and the mastoid wound clean. The right ear drum revealed a scar from the previous incision. *Postauricular examination:* There was no displacement of the auricle but there was a smoothing out of the folds, leaving only one-half of the postauricular fold intact. I saw no urgency to return the baby to the hospital, as our x-rays were negative. We did, however, find some tenderness over the mastoid, especially on deep palpation over the antrum and at the tip. The leukocyte count was 15,000 and the differential was 80% polymorphonuclears. With a low leukocyte count and high differential cell count, and with a history of previous suppuration and sudden cessation, a loss of postauricular creases, tenderness on deep pressure, and with a previous hazy picture of intestinal disturbance, I felt that we should not lose sight of the fact that the right mastoid might be involved. On 4-20-22, I ordered another x-ray of the right mastoid. The cellular structures looked blurred but there was no evidence of any breaking down. There was no history of any chills, but the temperature continued to range between 100 and 104. On the 26th, I again met the pediatrician and we went over the case together, and after a long conversation we decided that the flatulence, although it persisted, was not enough to explain the toxic symptoms that the child presented. We decided to operate on the right mastoid. The leukocyte count was 15,000 and the polymorphonuclear was now 80%. A postauricular incision was made and I found the periosteum thickened and adherent. There was a thick cortical layer which I removed. I found the pus under tension and the mastoid completely broken down. The baby made an uneventful recovery. This patient taught me a lesson that the clinical picture should stand primarily, and that we should not always depend on an x-ray, especially when it is negative.

7. Atypical Mastoiditis With Pain Over Emissary Vein: Morton Mazer, age 9½.

This boy is the son of a physician. He had an acute rhinitis for one week. On 5-4-21, I was called in to see him and learned that he had a temperature ranging from 103 to 104, with pain in the ear for the past three days. The examination of the ear revealed a bulging drum which I incised, finding pus. I found

that on palpation there was pain over the emissary vein at the posterior extremity of the occipital groove. The fever continued for several days. The pain was quite noticeable on pressure over the antrum, but the pain over the emissary vein was most marked. X-ray studies were made. There was no distinct breaking down of the cells but there was a slight blurring. I told the father that this mastoid must be looked upon with suspicion on account of the pain over the emissary vein. On the sixth day, 5-10-21, the temperature and the mastoid pain subsided, the ear discharge slackened somewhat, but the emissary tenderness still persisted. On the eleventh day, 5-15-21, the temperature again rose, the pus thickened, and the pain over the emissary vein became more severe, although there was no other pain over the mastoid area. I reincised the ear drum to promote drainage and in 48 hours the symptoms subsided, except for the pain over the emissary vein, which was persistent. For two weeks the temperature was normal, the discharge lessened somewhat, and it looked as though the boy would recover without any operation. The temperature suddenly jumped to 104 and remained so for three days. Ear examination showed that there was ample drainage from the middle ear but the tenderness became more diffused throughout the mastoid and the emissary tenderness still remained uppermost. I called Dr. Coates in consultation and we decided to operate. After removal of the cortex, we found severe congestion of the cellular structure, with only small droplets of pus. There was, however, a small cell of pus near the emissary vein. We also found a dehiscence of the inner plate.

We have had several other cases with pain over the emissary vein and every one which came to the operating table revealed true mastoiditis.

SUMMARY

1. A thorough history of the case is essential because we will learn the date of onset, suppuration if present, type and location of pain, and if pus had been present, its date of cessation. It is important to know whether paracentesis was performed, and if so, how many times it was done, as three or four ear drum incisions should be looked upon with suspicion as indicative of mastoid involvement.

2. One should note whether the patient has any facial palsy, the position of the auricle, whether there is any fullness over the mastoid area, and closely observe the number of postauricular folds. (In the aged it is interesting to note the difference between the diseased side from the normal. You will observe that the diseased side will reveal a distinct smoothening of the furrows, while the normal side will be wrinkled.

A thorough examination of the middle ear, noting the quantity of pus, is most important. We know that whenever there is a great deal of pus present, it must come from some other source than the middle ear and that must be the mastoid. Observe the site of the perforation and resiliency of the ear drum. A nipple-shaped perforation, with sagging of the posterior superior canal wall, suggests mastoid involvement.

3. Observe the tender points, such as, over the antrum, zygomatic region, tip and over the emissary vein. Also, ascertain the mobility of the skin and periosteum over the mastoid.

4. A progressive loss of hearing, with the history of otitis media, with or without suppuration, with vague pains over the mastoid, thickening of the periosteum over the mastoid, immobility of the skin and loss of postauricular folds should be watched carefully.

Significance of the Leukocyte Count: A high total leukocyte count is of no importance. It simply suggests resistance of the individual to the infection, unless some intracranial complications take place. A differential blood count with a high polymorphonuclear leukocyte count is pathognomonic of bone destruction and should be watched cautiously.

6. The x-ray is a great asset in our diagnosis of mastoid disease, but negative reports should be disregarded when the clinical symptoms are pointing towards mastoid involvement.

When children are radiographed, I always suggest to the radiologist that a few whiffs of chloroform be administered, so as to obtain good pictures.

In closing, I wish to say that I hope that I have pointed out some of the most prevalent symptoms present in atypical mastoid conditions. I am sure that as long as mastoids continue and atypical mastoids prevail, there will undoubtedly crop up signs and symptoms not yet observed.

1729 Pine Street.

DISCUSSION

DR. JOHN J. SULLIVAN, JR. (Scranton, Pa.): The method of examination as described by Dr. Ersner is so thorough and comprehensive that nothing need be added in the discussion. I am very much interested in his test. It is a new one to me. The diagnosis is brought about by one's clinical experience. For many years, I spent time looking up symptoms in the books, but I never seemed to find the point. Dr. Ersner is fortunate in having so many cases. I only recall having seen one or two atypical cases in an experience of several hundred mastoiditis cases. There was one which I thought especially interesting. A little girl, aged 12, came to the dispensary complaining of very severe pain over the right mastoid. Ear drums normal. Hearing distance normal. The question of hysteria came up. I asked her, had she had running ear recently and she said yes, she had had it three or four months before. The x-ray showed blurring, and at operation, a mastoid filled with pus was found. This was the only real atypical case that I have ever seen where there was absolutely no sign of the mastoid condition, outside of the pain.

Another case which I had a few days ago was practically similar. I saw this case with Dr. Cross of Scranton. A girl had had running ear several months previously, with a slight discharge. X-ray negative; symptoms negative. You could not call it mastoid. I

thought I would go over her sinuses and found pus at both antra of Highmore. Both antra were full of pus and polypoid tissue. As I was going to close her up I noticed a red spot in back of the antrum. I kept scraping and found a double antrum maxillare. The pain absolutely cleared up, although she had a lot of pain over the emissary vein.

Another case of a boy came to the West Side Hospital. He had swelling in the neck. I was very much in doubt as to his trouble. This was some 15 years ago. There was no tenderness over the mastoid. No pain but the swelling in the neck. Family physician said he had had discharge from the ear several weeks before. On opening him up, we found an abscess, and a lateral sinus thrombosis. About 10 days after the primary mastoid he began to complain of severe temporal aural pain. No temperature, but on account of the persistency of the pain, we opened him up and cerebral fluid squirted out under pressure. We exposed the dura-cerebella and the same thing occurred. We could find nothing to account for the pain. We exposed his lateral sinuses, and found complete thrombosis. We ligated the jugular vein and found it thrombosed for three inches. He was sufficiently recovered to drain the cerebral fluid five or six days afterward.

Dr. George W. Mackenzie (Philadelphia, Pa.): The subject which Dr. Ersner brought out in his paper is most important, for the reason that it is this class of cases that frequently comes to a fatal termination without the general practitioner or even the specialist recognizing the condition. I think he is to be complimented on the manner in which he has presented the subject. I do not hope to add much to what he has said. However, if I may be permitted, I should like to bring home one or two points.

Atypical mastoids are those in which we find little or no external swelling over the mastoid, little or no tenderness over the mastoid, frequently the absence of history pointing toward middle ear suppuration, and an intact membrane. Notwithstanding, the patient presents more or less vague symptoms of intracranial complications. The reason the membrane remains intact is frequently due to the character of the infection. The streptococcus mucosa infection is insidious; the infection goes up the eustachian tube rapidly, progressing through the middle ear cavity to the mastoid without making much impression in the middle ear itself. The external corticalis of the mastoid is found to be relatively thick in these atypical cases.

In spite of the handicaps it is possible to make a correct diagnosis. The tympanitic membrane is sufficiently translucent normally to permit one to see the posterior half of the hammer handle. When we find a membrane that appears frosted, looking somewhat like salt water, the long process of the handle is no more visible and the hammer handle presents a narrow appearance. Normally, we find the posterior margin of the hammer handle fairly well defined. When, however, the membrane is opaque, the posterior margin is poorly defined, for the reason that the posterior half of the hammer handle lies behind the membrane while the anterior is in intimate contact. If there is fluid behind the membrane, we lose the perceptibility of the posterior margin of the hammer handle.

Another thing which is worth emphasizing and which is probably one of the most consistent findings in mastoid is the sagging of the posterior superior wall of the external auditory canal. It is well to remember that the membrane is continuous with that curve of the posterior superior wall of the canal. The slightest periostitis causes some swelling, and if one will examine ostoscopically, he will find, instead of the continuous curved line, an angle where the swelling of the upper wall of the canula meets the superior portion of depression periphery of the tympanitic membrane.

Dr. Clinton J. Kistler (Lehighton, Pa.): I did not intend to say anything in this discussion, but as I listened to Dr. Ersner's description of his method of examination and diagnosis I felt that his paper should be brought to the attention of general practitioners. My special reasons for thinking so is the experience of a good many years ago when I was doing anatomical work in Berlin. When I got to Berlin the regular sources of anatomical material asked such terrific prices that my finances would not stand it, so one day I told my troubles to Professor Virchow at the Pathologic Institute and, in his usual gracious manner, he said that I was welcome to come there and work in the cellar under the lecture room without any charge, except to satisfy the attendants. My colleague and I worked in that cellar every afternoon for several weeks and when I think now of the way we butchered up material it makes my heart sick. We had at least fifteen or twenty infants on the tables practically all the time. After opening their mastoids and examining their middle ears, with very few exceptions we found pus, when there was no external evidence whatever to point to such a condition, and I wondered what could have been the conditions before death or the causes of death, when such a large proportion showed this postmortem condition. I felt that somebody must have missed something, and since hearing this very exceptional paper of Dr. Ersner's I can understand the situation better.

This is what makes me urge that this paper, in some way, be brought very prominently to the attention, not only of specialists in this field, but to the family doctor who first sees these very puzzling and obscure cases. I felt in Berlin that, perhaps, not all of these children should have come to the postmortem table, and I feel now that we have much less excuse for overlooking the middle ear and mastoid in these obscure cases of fever in children.

Dr. W. H. Sears (Huntingdon, Pa.): I had not expected to discuss Dr. Ersner's excellent paper or I would have brought records of some atypical cases of mastoiditis seen during the past one and one-half years. As it is, I will report briefly from memory, three cases which are of interest.

The first, a boy of 12 years, was seen by his physician, riding about apparently in perfect health, on his velocipede. Noting a swelling over the mastoid region. he sent him to my service in the hospital.

Examination showed a considerable swelling over the mastoid; this seemed to fluctuate slightly on pressure. A history was elicited of swollen and tender cervical glands ten days previous, for which the family physician had prescribed; otherwise negative. The swelling had begun shortly after the tender glands had been noted and had gradually increased in size. At no time had there been pain in the middle ear or elsewhere, nor had the hearing been affected. Temperature, pulse and respiration were normal. Urine negative. The external auditory canal and tympanic membrane showed nothing abnormal, while the nasal fossa, postnasal space and pharynx were uncomplicated by disease. Hearing was normal. The diagnosis seemed so positive of an uncomplicated postauricular abscess, which required nothing more than incision and

drainage, that neither an x-ray picture was taken nor was a blood count made.

Incision of the abscess revealed very much thickened tissue with almost no pus until the cortex was reached, when a perforation was found. The mastoid cavity was filled with granulation tissue and a moderate amount of pus, while the plate overlying the sinus had been necrosed and the sinus was bathed in pus—a perisinous abscess. The boy made an uneventful recovery.

Case number two, a young woman of 16, six weeks before I saw her had a severe head cold, followed by acute follicular tonsillitis, which was complicated by a middle ear suppuration. The tympanic membrane ruptured spontaneously and after a few days the purulent discharge gradually lessened and ceased in about a week.

She had returned to school in apparently normal health, when about four weeks later a small swelling developed over the mastoid region. She was referred to me by the family physician a few days after this. The swelling over the mastoid was small and did not fluctuate, nor was pain elicited by pressure over the cardinal points. The external auditory canal was normal. The tympanic membrane was somewhat dull, but it and the ossicles were mobile. Incision developed no sign of pus or catarrhal secretion. Her temperature, pulse and respiration were normal. However, an x-ray plate showed mastoiditis.

On opening the mastoid, the entire cavity was found broken down and filled with graulation tissue and pus, and another perisinous abscess uncovered. This patient likewise made an uneventful recovery.

The third case was a young woman of 27, who had been ill for several weeks with an influenzal cold. One afternoon about three o'clock she had severe pain in the left ear. Late in the evening pain in the mastoid region developed, and next day she had severe pain all through the left side of her head. At this time, I was called in to see her. She had all the symptoms of severe acute mastoiditis, i. e., bulging tympanic membrane with profuse flow of pus, posterosuperior wall broken down, etc. I operated at once, finding pus under much pressure, the mastoid cavity filled with granulation tissue and a perisinous abscess. This patient made a good recovery with a protracted convalescence.

The point of greatest interest is that, from the patient's standpoint, the first case had no definite symptoms of mastoiditis, the second but few, while the last was a fulminating mastoiditis; yet, on operation, all three presented largely the same pathological findings.

DR. JAMES A. BAEBITT (Philadelphia, Pa.): I think this paper is very valuable and very well presented. The study of focal infection has become almost a department of medicine. We have not placed mastoids in the same relative importance to internal toxemias as we have the adenoids. Those who first call attention to the pain and tenderness are not paying sufficient attention to different blood pressure and count not only for leucocytes and polynuclears but also for lymphocyte changes, which give considerable information as to the existence of focal infection.

There is one other point: Dr. Coates made a remark which has been of comfort, at least to me, in this battle which is going on among us between conservative treatment and prompt interference with mastoid trouble. In an operation to discover and remove a foreign body he called attention to the very marked difference in the normal mastoid contents and in any condition where we find a pathological change. So many of us have condemned ourselves for getting into a mastoid promptly and finding little apparent trouble in the mastoid itself, while we have often let alone a mastoid which produced serious after results. His observations were of very great comfort to me.

DR. BENJAMIN SHUSTER (Philadelphia, Pa.): I just want to say a few words about the title of the paper. It is listed as "Intuitions." I think Dr. Ersner is modest in calling it this, for if you will read carefully the latter part of his paper he will give you the points by which he makes his diagnosis and you will see that it is not "intuition." "Intuition" implies that the man just struck the diagnosis; and that is not so with him. He went over all the different points in making the diagnosis.

About atypical mastoiditis: if I could rewrite the textbooks I would rewrite the entire chapter on mastoiditis and would do away with the typical signs and symptoms. I would make it analogous to a case of pulmonary tuberculosis. You can have a frank hemorrhage and a chest full of râles and make the diagnosis of tuberculosis; on the other hand, the careful chest man will diagnose it in the incipient stage before the symptoms are present. The same thing applies to mastoiditis, and instead of typical and atypical mastoiditis I think it should be incipient and frank mastoiditis and should classify the typical mastoiditis in the category of advanced mastoiditis. When we get a typical textbook mastoiditis and the posterior parts of the skin are already bulging, sometimes, if let alone, it will drain itself. On the other hand, some of the most serious complications are found in cases of atypical mastoiditis.

I recall one little boy coming in with pain around the ear. I noticed that the furrows behind the ear were all gone and that there was very slight tenderness and a little fever, with some discharge. Ordinarily, this would not make a diagnosis of mastoiditis, but I felt that it was, and sent him over for operation. The patient had vomited once and I had also thought of thrombosis. At operation we found that the child had sinus thrombosis. No typical signs were present; yet the child was in a grave condition. I would designate as *typical* signs all the things mentioned by Dr. Ersner and not as *atypical* signs. The classical textbook signs should not be waited for to undertake surgical procedure.

DR. ERSNER (in closing): I wish to thank everyone for participating in the discussion of my paper. Dr. Babbitt's remarks about focal infection make me recall seeing a case several years ago at the Pennsylvania Hospital. The patient suffered with acute articular rheumatism and gave a history of otitis media of many years' duration which suddenly stopped discharging. Upon examination I found a small area of calcareous infiltration on the ear drum, and after manipulation the calcareous mass was dislodged and free pus was exuding. I feared that I was stirring up some acute otitic disease but in several days the articular rheumatism cleared up.

Dr. Babbitt also brought up the question of blood examination. This brings to my mind a case which I saw about a week ago. The x-ray report of Dr. Pfahler was sclerosis and some haziness with loss of cellular structure, but when I sent the child for blood studies the picture was just the reverse. Ordinarily we would expect a low leukocyte count, which was not present. The leukocytes were 10,000 and the differential showed 61 per cent polymorphonuclear leukocytes. Any acute inflammation will give you a high polymorphonuclear count, but this went on for several

months' duration, and that explains the leukocytosis with a low polymorphonuclear and a high lymphocytic count.

THE VALUE OF TEST MEAL STUDIES*

TRUMAN G. SCHNABEL, M.D.†

PHILADELPHIA, PA.

The position on the program assigned to this paper, together with its title, would seem to make for a bromidian presentation. In the matter of arranging the program, we of course, had no part; and as for the rather hackneyed subject, we offer no excuse except that many phases of modern medicine require from time to time thoughtful review and proper evaluation. Ever since Kussmaul, in 1871, suggested gastric intubation as a diagnostic procedure, the literature has been filled with testimony for and against this method. To begin with, it seemed to be a most rational mode of investigating stomach disorders; and there was a tendency to attach very certain diagnostic conclusions to the findings. As time passed a proper estimate was placed upon test meal studies, and it became evident that such investigation in conjunction with careful history taking, good physical examination and other laboratory methods afforded only an aid and not absolute evidence in the diagnosis of gastric disease.

There were those who failed to get this viewpoint and were therefore quickly discouraged when they found a certain percentage of discrepancies between gastric content evidence and operative or postmortem findings. With this apparent unreliability of test meal studies there also came for many the difficulties attendant upon the use of the old stomach tube. Gradually, then, stomach analyses became less and less the practice. During this time of trial, various types of test meals were suggested for different diagnostic ends. Coupled with these are the names of Ewald, Boas, Riegel, Salzer, Fischer, Sahli and others. Out of the whole matter, it developed that the meal of Ewald and Boas, consisting of bread and water, answered best the needs of gastric diagnosis. The severest setback for the test meal technique came with the use of the x-ray method of studying the gastro-intestinal tract. Roentgenological examination of the stomach seemed to answer almost all the purposes of stomach intubation and in addition gave accurate evidence not obtainable by the other method. As a result, many abandoned gastric analyses altogether. Some have never gone back to the practice, while others have again resumed such studies in their routine case work.

An added impetus was given to the test meal idea when Rehfuss, by means of many contributions to the literature, popularized the use of Einhorn's duodenal capillary tube for fractional gastric studies. This method, now widely used, consists of administering an Ewald meal and subsequently extracting 10 c.c. portions of the gastric contents every fifteen minutes until the stomach is empty. Each 10 c.c. portion is examined microscopically, chemically and for enzyme activity. By the utilization of the acid titration and pepsin activity figures in plotting curves, the progress of chemical and enzymic changes can be graphically represented. For this technique, it is claimed that accurate information is obtained concerning gastric work during the entire digestive period. Gradually, from various sources, work has been done which shows that the method offers very little diagnostic information not to be obtained by the one-hour extraction technique. On all sides efforts have been made to correlate types of acid curves with specific gastric dysfunction or lesions. No one has been able to say, however, that one type of curve is, for example, constantly found in gastric ulcer and another type in carcinoma. One of the objections offered against the older method was that it might not yield information concerning the exact height of gastric secretion. It was contended that the highest titration values might be obtained earlier or perhaps later than one hour after the ingestion of the test meal. This objection has never seemed to be a particularly important one. Another objection offered to the older method was that the same individual at different times might yield variable results. For the newer method the same may be said. Kopeloff (J. A. M. A., Vol. 78, pp. 404) has pointed out, and it has been our own experience, that the fractional method, too, may yield varying types of normal curves in the same subject on successive trials. Objection has also been made by Mellon (Arch. Int. Med., Vol. 28, 632, Nov., 1921) and by Gorham (Arch. Int. Med., Vol. 27, 434, April, 1921) to the assumption, if not so stated, then implied by the fractional method, that the gastric contents are a homogeneous mixture. Physiologists long ago pointed out the variable acid values obtainable in different parts of the stomach. This fact makes it seem unlikely that fractional curves are indicative of the secretory function of the whole stomach. Investigation of 10 c.c. portions of the gastric contents at any given time does not tell us a true story. Fractional analyses do, however, differentiate for us real cases of anacidity

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†Associate in Medicine, University of Pennsylvania.

and achylia gastrica from so-called spurious ones. From all of which it would seem that for clinical purposes we still have not gone much beyond the older single extraction method, which is supported by the experiences of many men for many years.

The older method, as all must remember, also utilizes the Ewald-Boas meal of bread and water. Variable amounts of the latter are used by different workers; but it would seem that two glasses, or about 500 c.c., is the average amount. Two slices of bread are given and the whole extracted in one hour. The amount of gastric contents obtained should be accurately measured, and a microscopic examination should be made of the gastric sediment. The amount of free hydrochloric acid and the total acidity should be determined by titration against a decinormal sodium hydroxide solution. Whenever it is possible to do so, patients should present themselves after an overnight fast. This enables one first of all to extract the fasting contents. We have been in the habit of suggesting the intake of four charcoal tablets on the night previous to examinations. Einhorn's duodenal tube is the preferable one to use. It is easier for the patient to take and insures a more thorough emptying, with little danger of traumatism. The charcoal is easily aspirated through the small perforations in the tip and is easy of recognition. Its presence in the fasting contents indicates an overnight retention. Anything much coarser than charcoal tends to clog the tube. After the fasting contents have been obtained, the bread and water meal is given to the patient.

At the very least, any gastric investigation should aim to determine whether or not a patient's difficulty is intra- or extragastric in origin; and if gastric whether of an organic or functional nature. The presence of an excessive amount of mucus, the findings of pus, blood, and very, very rarely of other morphological elements in the gastric contents, almost certainly points to an intragastric organic lesion. A clean gastric return usually indicates an extragastric origin for stomach dysfunction. Mucus alone is associated with chronic inflammations of the stomach, while pus, blood, and microörganisms are found in ulcer, carcinoma, syphilis and some rare lesions of the gastric mucosa. The presence of pus, blood and mucus from the respiratory tract must be ruled out. The fasting gastric contents afford an especially good opportunity to search for these various pathological elements. In the absence of any such abnormal findings, if there remains a suspicion of an organic gastroduodenal lesion, then a positive occult blood reaction in the feces, after a three-day meat free diet, will tend to support such a diagnosis. Overnight retention of food elements or the charcoal, if the latter is used, points very strongly to some pyloric obstruction, either of intra- or extra-gastric origin. So much of the findings by gastric intubation warrants definite conclusion for or against gastric pathology. The remaining information obtained concerns itself with the secretory and motor function of the stomach, and only serves as supporting evidence in diagnosis.

Observations from many sources, using the Ewald-Boas technic, show that most of the normal free hydrochloric acid values fall within the range of twenty c.c. to thirty c.c. of one-tenth normal sodium hydroxide solution per 100 c.c. of gastric contents; while the total acid values range from 40 c.c. to 60 c.c. The acid titration figures may remain within normal limits, even in the presence of organic disease, when other findings may then point the way under these circumstances. No specific diagnoses can be attached to these acid values. There are two occasions when the knowledge of the secretory function of the stomach is quite helpful. One occurs when the question of treatment arises, and another happens when the x-ray examination shows some outline deformity or abnormal peristalsis. In such instances, the careful roentgenologist will often receive much help from the acid figures. He will tend toward ulcer diagnosis, when a so-called hyperacidity exists, and will be inclined to diagnose carcinoma if there is an achylia or a hypoacidity. Normal secretory values, with the report of a clean digestion, may support the diagnosis of adhesions or some other extragastric pathology.

In the matter of gastric motility (gastric content emptying) as with secretion, there seems to be much difficulty in defining normal limits. Generally, the normal stomach empties all except about 100 c.c. of the Ewald meal. On occasions, in symptomless normals, as much as 400 c.c. is recovered. Nevertheless, if much over 150 c.c. is aspirated, it may be concluded that we are dealing with hypomotility. The opposite condition, hypermotility, is usually found in a group of subacid and achylia gastrica cases, some duodenal ulcers (usually with hyperacidity), linitis plastica, and certain hypermotile stomachs of functional type. Mild delay in emptying may occur in atonic and ptosed stomachs. A greater degree of hypomotility occurs in gastric ulcer or carcinoma of the pylorus, hypertrophy of the pylorus, peripyloric adhesions or tumors, pylorospasm, tumors of the head of the pancreas, duodenal adhesions, hourglass organically constricted stomachs, and oc-

casionally in ascites and abdominal tumors. Generally speaking x-ray studies shed a better light on gastric motility than do test meal procedures.

Not all of us, however, have easy access to good x-ray interpretation, and for many patients, this examination becomes an economic hardship. It is, therefore, important to determine whether or not barium meal studies should be made in our patients. The best indicator we have for necessary x-ray investigation is found in the story of the test meal. In a series of cases in which test meal evidence plus other studies indicated the likelihood of some organic lesion, over 80 per cent were shown by x-ray or operation to justify the clinical opinion. It would, of course, be difficult to say how much gastric pathology is missed in non-x-ray cases. The failure to make a therapeutic impression is another splendid indication for x-ray investigation in all gastro-intestinal patients. X-ray examination is not deprecated; it is urged whenever possible; but it requires much experience and great skill in interpretation. In this respect it does not differ from any other investigative procedures, and more especially is this applied to test meal studies.

We have not mentioned many other phases of the subject because we believe that much else in the matter of stomach tube investigation becomes too difficult and uncertain for ordinary use. Such untouched questions involve the matter of gastric bacteriology, the various tests for gastric cancer, gastric syphilis, gastric ferments, etc.

SUMMARY

1. The ease with which test meal studies may now be carried out by the use of capillary tubes, originally suggested for the extraction of duodenal contents, is emphasized. There is little excuse for omitting such tests in patients with stomach disorders.

2. The propriety and absolute need for test meal studies to make for well investigated gastric patients is pointed out.

3. Test meal studies, showing as they do gastric secretion, motility and pathological elements, are of great value in gastric diagnosis. In connection with other findings in our patients they still serve as supporting evidence.

4. The single extraction method is still in order. If time permits there is no objection to the execution of fractional studies.

5. Test meal studies are of value as a therapeutic indicator, and in x-ray interpretation.

6. While not mentioned in the body of this paper, it will be found helpful to inflate the stomach through the duodenal tube. By ausculting over the abdomen and listening for a cavernous puff of air, with perhaps bubbling, the gastric outline may be accurately determined. Sometimes gastric inflation reproduces the patient's presenting symptom, when definite diagnostic conclusions may be drawn.

7. Nothing new or original is claimed for this presentation. The difficulties of gastric diagnosis are appreciated and the variable possibilities for error in such diagnosis, even after x-ray and test meal studies have been made, are recognized.

DISCUSSION

Dr. J. Quincy Thomas (Norristown, Pa.): Dr. Schnabel's paper explains the value of test-meals in the diagnosis of stomach conditions in a very concise and scientific manner. It would be well for anyone who is interested in this work to get the doctor's paper in a printed form, keep it on your desk and refer to it when in doubt, as it will no doubt point out the difficulty which confronts you.

The diagnosis of gastro-intestinal diseases may be divided into four phases, which are: clinical history, physical examination, laboratory findings and x-ray examinations.

One of the most important steps in the study of the gastro-intestinal case is the patient's history. I, personally, consider this as the most important part of the diagnosis and I do not know of any procedure which will give you as much light or as much insight as to the cause of the symptoms as a carefully interpreted history. Furthermore, the accuracy of the pathological diagnosis bears a direct relationship to the clinical history. One should develop a technique for obtaining an accurate and detailed gastric history, just as one may develop a technique for doing an appendectomy. Let me illustrate this point by the following: If a patient complains of abdominal pain one must inquire, first, as to the location of pain, particularly, whether it is diffuse or localized, intermittent or constant, sharp, gnawing, dull or piercing. Does it remain constant in one region? Does it radiate? If so, in what direction; whether toward the back, directly through to the back, toward the chest, lower part of the abdomen, toward the gall-bladder, heart or appendix, or toward the lower extremities? The time of pain is very important. Is it worse during the day or night? What relation has it to eating, to swallowing, to bowel movement, to urination? What relation to the character of food—whether aggravated by sour, sweet, cooked, uncooked, coarse, hot or cold food? Relation to change of posture; for example, is it aggravated by lying down, turning to the right or left side? Does it start frequently before breakfast? If after breakfast, how soon? Does it last until the noon meal? Does eating give relief? If so, how long does the relief last? Does it prevent sleep or does it awaken the patient at night? If so, at what time and how long is he kept awake? What does the patient do to get relief? Does soda give relief?—hot water and hot milk, etc.? By this, one can determine in a great many cases whether the stomach is primarily involved. It is well worth anyone's time to read Boas' book on the "Diagnosis and Treatment of Stomach Diseases," in which he devotes sixteen pages to history taken in gastric diseases.

The next important phase of a gastro-intestinal case is the physical examination. No study is complete

without a careful and thorough physical examination. Upon this depends much. We must remember that only about 20% of the patients suffering from gastric symptoms who apply for treatment, have anything wrong with their stomachs. In the 80%, other organs may be affected, in which the stomach indirectly produces the symptoms.

I was very much impressed with the readers of the many papers before this section. Each one tried to impress upon us the importance of a thorough physical examination of the patient, whether trying to make a diagnosis of gastro-intestinal, bone, joint, lung or nervous diseases. If you fail in your diagnosis, the patients can at least say that they have received a good examination.

Test meals and their significance, is the important part of the third phase of the diagnosis which Dr. Schnabel has explained to us to-day. I do not know of any clinical symptoms that are positively diagnostic of the chemical condition of the stomach's contents. We have but one method of determining this, and that is by the use of test-meals and stomach tubes. Every physician and the general practitioner should be skilled in the use of the stomach tube, so that he can determine the gastric acidity and also study the gastric motility. Gastric motility can be accurately determined by the methods which the reader of the paper has given us to-day. The gastric motility is just as important as the acidity, and some clinicians claim the motility is more important than the chemistry of the contents.

The motor activity can be determined by the stomach tube more accurately than by the x-ray. There are certain diseases in which the character of the test-meal is almost diagnostic; for instance, hyperacidity is common in organic lesions of the stomach, duodenum, acute gall-bladder conditions and chronic appendicitis. In anacidity one would immediately think of chronic gall-bladder disease, pernicious anemia and gastric cancer. It is a great mistake to make a positive diagnosis on one symptom or one laboratory test alone. One must combine his entire study before arriving at a positive diagnosis. By scientific use of the stomach tube we are able to prescribe intelligently in gastric cases. Less medicine would be given our patients for indigestion if we knew the motor and secretory activities. Any patient who has been a dyspeptic for any length of time should be given a gastric analysis, and if denied the same the patient is not receiving just treatment. I know of no method as simple in its procedure that will enlighten you any more than the intelligent use of the stomach tube.

The fourth and last phase of the diagnosis is the x-ray study. The general practitioner has fallen into a bad habit in his digestive cases since the development of the x-ray. The x-ray is not the last word in the diagnosis in these cases and this fact should be impressed upon our patients and the general practitioner. Test-meals and gastric analysis do not reveal changes in the form, position, contour or mobility of the stomach, nor are they designed to reveal such changes, which rightfully belong to the province of the roentgen ray. The x-ray examination will overlook the functional changes, such as hyperacidity, achylia and the inflammatory conditions of the mucous membrane which make up a large part of our digestive cases. We must remember that we have more good clinicians than we have roentgenologists. I am not by any means discrediting the use of the roentgen ray in the diagnosis of digestive diseases. In all fairness I must say that the splendid work of the roentgen ray has helped us much in these cases. The fact is that I want to impress upon you that in digestive cases a thorough study of all these four phases is essential in arriving at a correct diagnosis.

DR. SCHNABEL (in closing): All I wish to say is that I am very grateful to Dr. Thomas for his sympathetic discussion.

DIAGNOSIS OF PALSIES OF THE EXTRA-OCULAR MUSCLES*

EDWARD B. HECKEL, M.D.
PITTSBURGH, PA.

I simply want to bring before you this little model and try to have you visualize the ocular muscles and their normal function and arrive at a method of making diagnosis in palsies of the extra-ocular muscles.

There are four straight muscles which rise in the apex of the orbit and project outwards. Their action is always complicated and not simple. The oblique muscles are the guide lines. There are few movements of the eyeballs which are similar in action. For instance, when we rotate the eyeball outward there is action of the external rectus, the oblique muscles acting as a guide line. In moving the eyeball inward the internal rectus acts and the superior and inferior rectii remain practically motionless. These hold the eyeball in position to prevent rotation. In moving the eyeball upward the superior rectus acts in conjunction with the inferior oblique, and in moving it downward the inferior rectus, in conjunction with the superior oblique, turns the eyeball down, while the superior rectus relaxes. As a matter of fact it is the inferior oblique which acts when the eyeball is turned in and up.

In any palsies of the extra-ocular muscles, one of the first things resulting is disturbance of the bifocal vision. In the recognition of diplopia we must bear in mind certain things. If the object falls to the nasal side of the retina, we project to the temporal side and vice versa. Of course, in a recent palsy of the extra-ocular muscles it is not difficult to recognize, because there is deformity of the eyeball, but in paralysis of either of the obliques the deformity is not apparent and we must rely on subjective symptoms. As a general rule, the false image is always in the direction of the paralyzed muscle. In a diplopia the two images are separate, the false image falling in the direction of the paralyzed muscle. The oblique muscle relaxes and the eyeball rotates slightly outward. The image in this eye would then not be in the vertical meridian; the image in the vertical line will also be tilted. The top of the image is tilted

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toward the left so that the false image is tilted toward the paralyzed muscles.

I will leave it to Dr. Peter to continue the discussion.

DISCUSSION

Dr. Luther C. Peter (Philadelphia): For practical purposes it is best to divide the subject into acute and chronic palsies. The latter group is complicated by contractures and spasm which one rarely finds in an acute paralysis, and the diagnosis, therefore, is more difficult.

In the acute variety, fairly definite conclusions can be drawn from a study of three symptoms or phenomena, namely head and face positions, limitation in rotations and the diplopia field. Of these the field of diplopia is the most definite and accurate, but the study should be made in the order as given.

Head and face positions are not usually given the consideration which they deserve. In the so-called vicarious rotations of the head, there are two distinct components which should be carefully separated. They are face rotations and tilting of the head to the shoulder. The former are reliable and are the true vicarious rotations referred to; the latter is not always reliable, is more frequently observed in the phorias and is not, strictly speaking, a vicarious rotation, but a mechanical aid in diminishing the diplopia.

In lateral palsies, the face is turned toward the paralized muscle and indicates that a right or left rotator is involved. Example: The right external rectus is paralyzed. In order to correct the lateral separation of the images, the face is turned to the right, and the eyes are brought into the field to the left where the right externus operates at a minimum. This is a true vicarious rotation, the function of the weak externus being relieved by placing the eyes in a more advantageous position for bilateral single vision. In the vertically acting muscles the analysis is a bit more complicated because of the double function of the vertical muscles. The face, however, is again turned in the cardinal direction of the normal action of the paralyzed muscle. If an elevator is involved the face turns up and if a depressor, it is turned down. This readily determines the group. As the vertical muscles are either right or left hand rotators as well as elevators or depressors, the face is not only tilted up or down as the case may be, but it is turned slightly to the right if a right hand rotator is affected or to the left if the muscle is a left hand elevator or depressor. The face is turned *toward the maximum vertical pull* of the muscle, or toward the field of greatest vertical separation of the false image from the true. Here again the position of the face points to the yoke muscles, one of which is paralytic.

A careful study of this phenomenon you will find worth while as it rarely fails. Example: right superior rectus palsy.

Shoulder tipping, more frequently seen in the phorias than in palsies, has a twofold purpose. It lowers the right hand image, regardless of the eye to which it belongs, when the head tips to the right shoulder, and the left image when the head tips to the left; second, it corrects the obliquity of the false image. In a careful study of this phenomenon during the last two years, the speaker has found a number of exceptions to the first function but practically none to the latter. The conclusions to be drawn from this study are: first, shoulder tipping is much overestimated as a means of reducing vertical diplopia; second, it is not reliable from a diagnostic standpoint in indicating which is the high image; and third, when present, it is largely in the interests of correcting the leaning of the false image which the paralytic muscle cannot correct. If you wish to determine the relative efficiency of these two methods, in relieving a vertical diplopia, namely by the position of the face and by tilting the head to the shoulder, try the methods on the next intelligent patient who comes under your care, and you will be convinced that shoulder tipping is only supplementary to the former. The face turning brings the eyes into the most favorable position for single binocular vision, the latter is an imperfect attempt to correct the diplopia, with the eyes in a most disadvantageous position for single binocular vision.

The point which I wish to bring to your attention is this: the position of the face is a most reliable symptom in guiding the observer to the associated muscle group in which the paralytic muscle will be found, by a study of the rotations and by the diplopia field. The tilting of the head to the shoulder is less reliable.

Limitation in the ocular rotations: Careful observation of the rotations in the cardinal directions and up and to the right and left, down and to the right and left, will rarely fail to show conclusively the eye which fails to follow and the direction of the same. If the paresis is slight, it is best to make this examination in a dark room and observe the varying position of the corneal reflex as thrown upon the cornea by an ophthalmoscopic mirror as the eyes are rotated by the patient. The relative position of the corneal reflexes in the two eyes is a more delicate test than the simple observation of the ocular movements.

Diplopia field: The diplopia field is the most accurate of the tests which we have at our disposal. You are all familiar with this test. Just a few practical points should be stressed. First, always cover one eye with a red glass. It will help the patient to distinguish the two images and will simplify the work of the operator and the interpretation of the diplopia field after it is charted for study. Second, study your patient's field as it were through a transparency. You may view the patient's field as the patient views it or as though it were your own field, or you may view it from in front of the patient with reference to the patient's right or left. The latter method is perhaps the easiest because all examinations are made with the operator facing the patient. The charting should be done in the same way, with the patient in an imaginery position back of the charted field.

Third, in vertical diplopia, it is important to bear in mind, that a vertical separation which increases as the eyes are elevated, and also increases as the eyes are lowered below the horizontal plane of the vision, indicates that one is dealing with a paralysis of a depressor as well as an elevator muscle or that there is overaction or spasm of the associated muscle in the fellow eye. This phenomenon when present is most confusing unless one clearly grasps its significance. Fourth, the crossed or uncrossed character of the diplopia in vertical palsies is of great interest but should not be given great prominence because of its variability.

SOME NEURO-OPHTHALMIC STUDIES OF WAR INJURIES*

HUNTER W. SCARLETT, M.D.
PHILADELPHIA, PA.

Ocular manifestations of injuries to the nervous system are so varied that rather than at-

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tempt to cover the entire field, I will briefly present a few of the most interesting phases.

For convenience, the following classification has been adopted:

(1) Manifest lesions of the cranium, involving the cerebrum.

(2) Cervical smpathetic nerve injuries.

(3) Injuries affecting the tissues of the globe and the cranial nerves, either directly or by contre-coup.

(4) So called functional disturbances.

Under the first heading may be included cases showing different varieties of hemianopsia such as homonymous, upper and lower quadrant, central, paracentral and isolated scotomas. Vision in these cases may be diminshed though usually it remains unimpaired, even should the hemianopsia extend to the fixation point.

The work of Holmes and Lister (1) and later of Riddock (2), Morax (3) and others, revised somewhat our knowledge of the cortical localization of the retina. Prior to 1914-15 macular representation was placed in the anterior portion of the visual area, while the periphery was situated in the posterior portion.

Holmes and Lister found the following: (a) "The upper half of each retina is represented in the dorsal, and the lower in the ventral part of each visual area. (b) The macula is represented in the posterior portion of the visual area, probably on the margin and lateral surfaces of the occipital lobes. The macula has not a bilaterial representation. (c) The periphery is represented in the anterior portion of the visual area, and the intermediate concentric zones, between the macula and periphery, from behind forward in the visual cortex. (d) Those parts of the retinæ adjoining their vertical axes, are probably represented in the dorsal and ventral parts of the visual areas, while the retina in relation to the horizontal axis is projected onto the walls and floor of the calcarine fissures. (e) Defects of vision in the fields of the two eyes are always congruous and superimposible, providing no abnormality of the peripheral visual apparatus exists."

Morax concurred in general with the above deductions, but was not convinced that the macula had not a bilateral representation, for as he pointed out, central vision was usually normal or better, even where the hemianopsia extended to the fixation point, and was diminished or lost only when there was a lesion of both occiptal lobes. This fact was emphasized by Dr. Ingham and myself (4) in a series of thirteen cases reported last Spring.

There probably exists at the point of fixation a small zone, say of one degree in extent, where there is an overlapping of innervation from each occipital lobe. Otherwise the preservation of normal acuity of vision would not be compatible with destruction of one macular center, i. e., the center on either the right or left occipital lobe.

Defects of vision in the fields of the two eyes may be, but are not always exactly superimposible.

Morax, Moreau and Castelain (5) made a distinction between the vision of the periphery of the macula, and that of the fixation point. They found just the same alterations in the periphery of the macula as in the peripheral field properly speaking, namely quadrant, complete, or irregular hemianopsia. These alterations may occur either in conjunction or not with peripheral alterations, thus presupposing two cortical centers, one for the macula, and one for the periphery, so close that frequently both are affected.

Besides deductions from study of deficiencies in visual orientation, Moreau (6) says to determine the real deficiencies in hemianopsia, it is necessary to make physiological studies of why central vision is so often intact in lateral and bilateral hemianopsias. He therefore divides the visual field into three zones of "perception, distinction and precision" from without inward, but with no sharp line of linear demarcation. He makes complementary studies with special test objects. In the outer zone objects are roughly and indistinctly perceived, in the middle they are distinguished, while in the central zone they are seen with precision.

His conclusions are that it is not a question of how much of a field remains or is lost, but the actual intereference with its function.

Riddock says that light and movement are the first stimuli to be appreciated in a recovering visual field, and since light cannot be charted, repeated examinations of moving objects in a blind field are of value in the prognosis of returning vision; thus in cases where there is perception of movement, there will be some return of vision. Where there is no return of movement after several months, the fields affected will probably remain blind.

Recovery for the appreciation of movement begins at the periphery of the field, and extends inward. These facts were also observed by Dr. Ingham and myself.

Under my second classification, the so-called Bernard-Horner syndrome, due to injury of the cervical sympathetic, was quite commonly observed, although few references in the literature could be found.

Prior to the war the usual etiology of such cases as were reported, was ascribed to aneu-

rysms, enlarged glands, mediastinal tumors and cervical ribs.

Enopthalmos, ptosis, narrowing of the palpebral fissure, and myosis were the most constant symptoms, while decreased ocular tension and altered near point, were less often present. Tourney (7) stated that on looking toward the affected side, the difference in the size of the pupils diminshed, while the opposite was true on looking toward the sound side; also in many cases the nictitating membrane on the affected side, was more prominent than that on the sound eye. The last two conditions were encountered several times in a series of eleven cases, as was also anhidrosis. There was just a suggestion of hemiatrophy facialis in one case, while heterochromia irides, which is supposed to be due to section of the cervical sympathetic, was not seen. The latter, according to Calhoun, is never present in adults, although Bistis has reported one case.

Vasomotor disturbances were prone to appear several months after injury, and therefore if the cases were observed early, may not have appeared at the time of examination.

Lower lesions, affecting the brachial plexus roots, through which sympathetic fibres run, were the most severe, causing the typical occulo-pupillary syndrome, while lesions higher up, involving the sympathetic nerves, with complete or partial interruption, produced less marked symptoms than the root lesions.

Contusions of the cord caused the least pronounced phenomena, and usually resulted in more complete recovery than root or nerve lesions.

The action of cocain on the pupils was interesting in relation to the severity of different lesions. In root and nerve injuries, the pupils either did not dilate, or only to a slight degree, whereas in the cord contusions they dilated readily but not fully.

Thirdly, injuries affecting the tissues of the eyeball or ocular nerves, were of common occurrence and included hole in the macula, lacerations of the retina and choroid, atrophy of the optic nerve either partial or complete, and temporary paresis or paralysis of the motor nerves supplying the intrinsic and extrinsic muscles.

Lesions of the ocular tissues were of interest not alone because of their varied types, such as irregular tears of the inner tunics of the globe, and discrepencies in contour and size of that particular lesion—hole in the macula—,but also from the standpoint of their etiology. The usual history of such cases revealed a shell explosion close by, throwing the patient several feet in the air, or simply a sudden blast without bodily injury, producing a momentary alteration in the extra-ocular pressure, thus causing a concussion of the eyeball against the nonresisting bony orbit. In either case the result was apt to be the same, namely a linear rupture of the choroid; usually in the macular region, or a punching out, as it were, of the thinest portion of the retina at the macula.

Fracture of the bones of the orbit with a consequent pinching of the nerve, resulting in optic atrophy, was frequently seen. Personally this condition was observed many times in wounds traversing the face, or entering in the mastoid region with exit in the malar region of the opposite side.

Disturbance of the cranial nerves of the eye, was less frequently encountered, but Uhtoff (8) reported two cases of lesions of the 5th nerve with resulting epithelial erosion of the cornea, anesthesia of the cornea, and absence of lacrimation. One of these showed a small F. B. in front of the gasserian ganglion. Kapoustine (9) saw one case in which a ball had traversed the brain, presenting paralysis of mastication, diminution of vision and concentric contraction of fields; and another with an injury of the left face was followed by paralysis of the internal and external muscles of the left eye, and amaurosis. Examination eliminated any lesion of the eyeball. X-ray was negative. There were slight meningeal symptoms, and the condition was supposed to be due to a blood clot at the level of the inner portion of the sphenoidal fissure and the optic foramen. The symptoms, with the exception of the paralysis of the internal muscles, disappeared within twenty days.

Under functional disorders the disturbing factors, as a rule, were emotional and psychical, while the outstanding manifestations included diminished vision, contraction of the visual fields, with interlacing of colors, and usually mydriasis. Often associated with these were spasm of accommodation, temporary blindness, failure to recognize colors perfectly, scintillating scotomata, squint and diplopia, erythropsia, and muscæ volitantes.

Rochon-Duvigneaud (10) reported the case of a soldier who, while on guard duty, suddenly lost his vision. Examination revealed the patient to have been of a highly nervous temperament, possessing marked convergence with contracted pupils, and a manifest myopia of —12 D, which brought his vision down to 5/7. Under atropin there was a hyperopia of +1 D. The myopia returned after the atropin had disappeared.

In Lemiere's (11) case, a soldier under severe bombardment became blind, pupils were di-

lated, and marked blepharospasm resulted. At first his fields were contracted, and he presented a temporary slight optic neuritis. After one and a half months all symptoms had disappeared.

In support of Lemiere, Bussy (12) reported two similar cases with amaurosis, mydriasis, and anemia of the retina, showing marked thinning of the vessels. He believed this condition was a vasomotor disturbance under control of the ocular sypmathetic, and not the general sympathetic.

Bergl (13) presented a case of bilateral Argyll Robertson pupils, following the explosion of a mine. No apparent injuries were present. Similar cases were reported by Finkelburg and Axenfeld. Lues was eliminated, and the sign disappeared within three weeks. They believe it was due to a lesion of the gray matter in the region of the aqueduct of Sylvius.

Other interesting cases of functional disturbances have been reported, one by Dupouy and Bosc, with convulsions of face and limbs, general anesthesia and mydriasis; and another by Guillam, with a general contracture of the body, including the superior recti muscles. In most of these a lumbar puncture was negative, but their condition improved under this procedure.

The exact cause of these disorders cannot definitely be determined, but there is little doubt that commotion from high explosive shells, without evidence of external injury, produces a profound cerebral disturbance manifested by the various conditions observed. These are purely functional, meaning that the organic basis is not known. It may be vascular or an affection of the nerve cells, but the condition is capable of retroceding, and rapidity of cures has often been seen in such grave conditions as deafness and blindness. On the other hand, there are cases which resist all therapeutic or suggestive measures.

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DISCUSSION

DR. WARREN S. REESE (Philadelphia, Pa.): It was my good fortune to see the very interesting cases which were the inspiration of this excellent paper. I think that Dr. Scarlett is to be commended especially for his work on sympathetic nerve injuries. His series of these cases is by far the largest and most comprehensive on record.

The field defects resulting from occipital injuries which we observed at Cape May were mainly of the hemiopic type, although there were a number of quadrant defects and a few cases of homonymous paracentral scomatomata. Of these the right homonymous defects were most troublesome, especially when reading was attempted. Some of these patients were advised to try to read upside down but this did not meet with much success. Had this been taken up systematically however, as was the lip reading, I believe that a great deal might have been accomplished.

The theory of bilateral macular representation, as advocated by Dr. Scarlett, seems much more plausible than the unilateral theory.

On carefully going into the history of the sympathetic nerve cases, some of these men remarked that immediately after the injury the pupil corresponding to the side affected was dilated, or that the eye on that side protruded or had a staring appearance. This would seem to indicate that the primary effect of these injuries had been of an irritating or stimulating nature. All these cases, when we saw them, presented the signs of sympathetic nerve inhibition, as enumerated by Dr. Scarlett.

I am sorry that Dr. Scarlett had not more time to speak of the cases which came under his third classification and which comprised the concussion injuries. By these I refer to the ocular lesions produced by force transmitted through bone or soft tissues from an adjacent traumatized structure. I did not observe any ocular injuries, as referred to by Dr. Scarlett, in which there had been no external injury. These cases were most interesting and varied from a slight pigment stippling of the retina to avulsion of the optic nerve and extensive retinochoroidal disturbances. Hole in the macula was encountered infrequently. This, I believe, was due to the fact that these injuries were generally produced by comparatively small, high velocity missiles, whereas hole in the macula usually results from injury by a large and relatively slow-moving object, such as a baseball. Very often the course of the projectile could be traced quite accurately from the ocular lesion alone.

For obvious reasons, we did not see many cases of functional disturbance. I had one case of hysterical blindness following a moving picture camera explosion. He cleared up rapidly, however, under suitable psychotherapeutic measures.

DR. LUTHER C. PETER (Philadelphia, Pa.): We are indebted to Dr. Scarlett for presenting this subject because he brings before us some very interesting thoughts for discussion. The first with which the speaker was impressed was his reference to macular cerebral representation. The last word on this interesting subject has not yet been said. Mills, in his book published quite a few years ago, speaks of the macular representation as a half representation and yet he feels that each center in the occipital cortex is more or less representative of the total macular area. He points out, however, that the dividing line is not so sharp in the macular area as is the peripheral representation. In this he is confirmed by Morax. Morax found two zones. In some

instances an area of a degree to a degree and a half beyond the point of fixation was observed. In other instances he found an area ranging from 5 to 10 degrees beyond the point of fixation which remained intact. He therefore concluded that there is a foveal representation in each occipital cortex and also a larger area which includes the entire half macula.

The second point in Dr. Scarlett's paper which is of great interest is that of asymetry of the fields in homonymous hemianopsia. In the cases reported by Cushing two years ago, before the Neurologic Section of the American Medical Association, which met in Atlantic City, a certain number of fields showed a greater involvement of the field homolateral to the side of injury than in the contralateral field. This inequality of the fields has been observed by others and many attempts have been made to explain it. There are three possible methods of explanation. The first is that of inaccuracies in the technique of field taking. In recent years, however, this work has been done with a great deal of care, mostly by men of experience, and technical errors are readily detected. The second explanation offered is the anatomic explanation. It is thought by some that the associated fibres, the crossed and uncrossed fibres,, as they emerge from the chiasm, do not lie in immediate proximity. A lesion, therefore, when minute, might involve one without involving the other. This would not explain however the interesting fact that the field homolateral to the lesion usually shows greater contraction than the field contralateral to the lesion. The third, and correct explanation of this incongruity lies in the varying sensitivity of corresponding points in the retina. For example, a point 20 degrees to the temporal side of the retina is less sensitive to a stimulus than a point 20 degrees to the nasal side. The same is true of the superior and inferior parts of the retina. As the field homolateral to the lesion always represents the temporal retina and the contralateral field represents the nasal retina, this asymetry finds a ready explanation.

Dr. Scarlett (in closing): A word concerning the method we employed in examining these cases. For the periphery we used the perimeter and for the macula we used a screen. In all cases we found that hemianopsia extended within one or one-half degree of the fixation point or even up to the fixation point.

In several cases, to study the hemianopsia in relation to the fixation points, tests were made at a distance of five meters with a white object 5 mm. in diameter. At this distance the object was seen only when it approached within less than 1 degree of the fixation point.

THE MORBIDITY THAT FOLLOWS PROSTATECTOMY*

ALEXANDER RANDALL, M.D.
PHILADELPHIA, PA.

It is remarkably pleasant to talk of the success of prostatic surgery, returning benefits of a most gratifying nature, in patients least likely to endure an operative procedure. The percentage of successes to-day is fortunately high, and we have lived to see a mortality rate that was shocking, reduced to a nation-wide average of about ten per cent: ninety successes and ten failures. Unfortunately, we must add to the ten per cent of failures (actual mortality) another equal percentage where recovery took place perhaps, but only a partial return of normal function followed. To be fair we must all recognize that such are also surgical failures, and I believe they will be eliminated only by a close analysis of these failures, and not by a greater perseverance in the methods that have been so far productive of this success. They are apt to be errors of an operative technical character that have left us a living patient, to be sure, but one with a urinary frequency, or a persistent residual urine, a persistent fistula, or even a return to catheter life. It is this group, presenting a morbidity that the specialist is called upon to relieve, where the operative procedure has not been productive of the hoped-for result.

There are three technical mistakes that to-day stand out as the most serious errors of judgment in handling such cases of urinary obstruction, and I wish to present and discuss them briefly, hoping by photographs of actual obstructive prostates to show you wherein the technical error lay.

First of all, let me consider from a different angle than the usual, the long mooted question of the choice between suprapubic and perineal prostatectomy. There is no doubt that the hypertrophied prostate can be successfully removed by either of these methods; also that in the hands of those especially adept in one or the other method, the percentage of successes is high. Everyone has come to the same conclusion, that it is the preoperative and postoperative care of the patient that counts for more, in the ultimate result, than the mere operative procedure.

My studies have convinced me that the prostate in hypertrophying shows a predilection for one of two fixed ways of enlarging, and in this difference, the internal sphincter plays a very important rôle. Hedged about by fixed anatomical structures, an enlarging gland must ultimately grow upward. In doing so, the most frequent path of growth is by a gradual dilatation of the internal sphincter and a gradual herniation of the hypertrophying prostate through it into the bladder cavity. The second mode of enlarging is likewise upward, but in this type of case, the internal sphincter remains tonically closed and the prostate in hypertrophying, raises it and the entire bladder mass without dilating the sphincter at all, it never becoming anything more than a hypertrophied gland remaining within its anatomical limits.

(At this point lantern slides were shown to demonstrate this difference.)

It can be quickly seen that this difference as

*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

to whether or not the internal sphincter is dilated, creates a preference as to whether the prostate be removed by the suprapubic or the perineal operation. There have been numerous studies made to demonstrate whether or not, following prostatectomy, the internal sphincter becomes again a functioning muscle. Diversity of results from these studies proves the point just made, that there are these two differences of sphincteric reaction to hypertrophy.

It is a well-known fact that irritation of the posterior urethra creates a desire for micturition. This is seen well exemplified in acute posterior urethral infections, as often also in the passage of instruments. If, following prostatectomy, the internal sphincter does not again close off the posterior urethra, it is not to be wondered at that the patient has abnormal frequency of urination, durnal or nocturnal, following prostatectomy.

Following these two types to their proper surgical handling, it is easily seen that in the first the whole growth has *gradually* dilated the internal sphincter. The surgical indication here is to remove that growth by suprapubic prostatectomy, and in doing so, the dilated sphincter will neither be in the way, nor will it be injured by such enucleation, and following such an operation, it may be expected that the internal sphincter would regain its tonicity and return to function.

In the second type, however, it would be impossible to enucleate such a prostate without first dilating the internal sphincter. It is very dubious whether such could be done satisfactorily at the moment of operating, and in doing the enucleation the result must be that such a sphincter is inevitably lacerated. Again it is very questionable whether such a lacerated muscle would ever regain its functional capacity, and this is the type of hypertrophy which should be removed by the perineal operation, in which the sphincter would neither be dilated nor injured and its functioning ability in nowise hampered. Likewise, this is the type where, following perineal prostatectomy, one can feel, after the enucleation of the prostate, a tight ring about one's finger in the vesical orifice, and it is also the type occasionally seen where one enjoys the delightful experience of having a perfectly continent patient immediately following removal of the perineal drainage tube.

I have had three such patients in whom the perineal incision practically healed per primum, and several others in whom urinary continence was present from the time of the removal of the drainage tube, 24 hours after operation.

Close cystoscopic study is necessary for a preoperative decision as regards this point of the tonicity of the internal sphincter, and on it should be based the choice of operative approach.

The second point I wish to make relative to the technical performance of prostatectomy concerns the presence or absence of median lobe enlargement. It has been sufficiently proved, by various investigators in the past, that there is no longer any question as regards the pathological development of a middle lobe of the prostate. When such is present, dilation of the sphincter is always the case, and suprapubic prostatectomy is the operation of choice. The one particular point that I wish to make is the possibility and it is a frequent one, of the middle lobe being the sole obstructing feature, and in the total absence of lateral lobe enlargement. In such a case, the usual stigmata of prostatic hypertrophy obtained by rectal examination are absent and cystoscopy alone will render an accurate diagnosis.

(At this point, lantern slides were shown of cases of solitary median lobes of obstructive character.)

One must constantly keep in mind the possibility of such solitary median lobes, wherein the clinical history and the catheter examination suggests prostatic obstruction, but where rectal examination reveals a prostate in no wise above normal in size, and I repeat such median lobe enlargements cannot be felt per rectum.

The third technical error that I wish to discuss with you is the proper handling of that condition spoken of as "contracture of the vesical neck," "sclerosis of the internal sphincter," or as "median bar formation." Parenthetically, let it be said that this pathological condition gives a clinical picture identical with that of hypertrophy. The examination likewise reveals a varying amount of residual urine, while generally a small, even atrophic, prostate is felt on rectal examination.

We have all heard the surgeon remark at operation that he unfortunately was dealing with a small sclerotic prostate. To-day I would deem such a gross error of surgical diagnosis, and an even worse error of surgical operative technic. Such prostates can not be enucleated; the process is one due to inflammation and not hypertrophy.

(Lantern slides were here shown to demonstrate this type of bladder obstruction.)

Its proper surgical handling requires the removal of the obstruction due to the sclerosed posterior vesical lip. The choice of method by which such should be done varies with the judgment of the surgeon. Such tissue may be destroyed by fulguration, by the urethroscopic punch operation (aided or not with the cautery), or else by suprapubic cystotomy and the excision of a wedge of tissue from the posterior lip of

the vesical orifice. Personally I feel that the patient's time and resistance should be considered, and he be given the advantage of a trial of the former procedures before reverting to a suprapubic operation.

These are, therefore, three salient points of an operative technical character that I feel are frequent errors of judgment, and are no doubt likewise frequent reasons of an incomplete recovery following prostatectomy, causing this operation to have a morbidity that should not exist.

DISCUSSION

Dr. B. A. Thomas (Philadelphia, Pa.): When I was invited to discuss Dr. Stewart's paper on the "Technic of Prostatectomy,' I did not know that on such short notice I should be asked to discuss the pathology and the morbidity of hypertrophied prostate. Certainly, the demonstration of the pathology of prostatic hypertrophy, as shown by Dr. Randall, is very commendable. I think, however, that the pathology of this gland is pretty well understood and I am very much interested to see Dr. Randall emphasize the matter which Dr. Geraghty brought out in respect to dilatation of the internal sphincter in this condition in formulating his new modification of perineal prostatectomy. I feel it is a matter to which we should give material consideration, and doubtless plays an important part in respect to the morbidity in this condition.

In this connection, I feel that the modifications which have been proposed for perineal prostatectomy in recent years are to some extent an admission of the shortcomings of the operation in a large minority, if not a majority of cases of prostatic hypertrophy. I have various modifications in mind (as Dr. Young's new modification of his own well-known procedure) and Dr. Geraghty's admirable one emphasizes the importance of thoroughly avoiding the compressor urethrae muscle in exposing the junction of the prostatic and membranous urethra, thereby avoiding incision of the membranous urethra or cut off muscle. This, however, is a point about which I thought Dr. Young had admonished us. Certainly in my own work I have always safeguarded this muscle, for it is obviously of paramount importance in the prevention of incontinence of urine after these operations. Dr. Cecul's modification in prostatectomy is another instance of what seems to be a slight admission of the unsatisfactory results which are obtained by the perineal operation.

I agree strongly with Dr. Randall that the most important consideration, perhaps, in undertaking a prostatectomy is the determination of the fitness of or what we call the preoperative care of the patient for the operation. I cannot go into this phase of the subject in great detail, but we all know that the determination by various examinations, particularly the cystoscope, of the exact character of the pathology is a very important consideration, and unless that is done by one who is capable of interpreting cystoscopically the living pathology of the prostate, and who is experienced enough to know the operative indications, the best results and minimum morbidity will not be realized. He is the man who should be best qualified to carry out the details of the operation, especially in difficult cases. I feel that after having determined by all the technical examinations necessary, as to whether the perineal, suprapubic, transurethral, punch operations, or what not, should be performed, the surgeon should stand impartially prepared to do that particular operation which should be done in the given case, dependent upon the character of the pathology present, and not subject the patient to that particular operation to which he is wedded for one reason or another.

The two-stage procedure, or what has been called the "safe" procedure, I think can be rendered just as safe in 90 per cent of cases by proper catheter drainage of the bladder in the hands of an experienced urologist, as by primary cystostomy. It is very important, as pointed out by Dr. Randall, in the suprapubic operation, to adopt the procedure popularized by Squier. With respect to the punch operation, which was mentioned in these cases and should be employed in a minority, certain precautions must be observed. The indications for and the benefit to be derived from this operation in many cases are clear cut and should not be underrated, and will not be if these patients are properly examined and studied before operation. I believe the operation may be just as dangerous a procedure as a formal prostatectomy, for there have been a number of deaths from hemorrhage following the punch operation. The proper procedure to adopt if you wish to render the punch operation no more dangerous than a prostatectomy is to associate it with a cystostomy, either suprapubic or perineal. I feel that you can carry out a better punch operation by seeing and feeling what you are doing, with a complete control of hemorrhage if bleeding is pronounced, and perhaps as the result of better drainage of the bladder, minimize the danger from infection.

Dr. Thomas C. Stellwagon (Philadelphia, Pa.): Dr. Randall deserves every credit for his work in collecting so impressive an array of specimens, as they are both interesting and instructive. I feel very much as Drs. Randall and Thomas do with regard to the question of preoperative study in prostatic cases. I think that a great many of the errors and a considerable percentage of the mortality following prostatectomy is due to the fact that the patient has not been seriously enough considered, while the surgeon has been more or less set in his views as to a certain definite procedure. I am an advocate of the suprapubic in preference to the perineal route in prostatectomy, as, I believe, are most of the surgical profession in this country to-day. Notwithstanding the fact that credit must be given where credit is deserved and that perineal prostatectomy in the hands of such masters as Dr. Hugh Young is a most excellent operation.

Most of the criticism called forth against the suprapubic route was largely engendered because of Freyer's operation, which, briefly speaking, was to begin enucleation at that point at which the prostate presented. The consequence of such practice is only too evident. Traumatization and permanent damage to the internal sphincter and the musculature surrounding the neck of the bladder is often inevitable. But this fault has been largely eliminated where the technique followed by Drs. Loux and Squiers is adhered to. They recommend beginning enucleation as far forward as is possible, working backward, and peeling off the fibers of the internal vesical sphincter. I think that much of the mortality is due to injury. One thing impressed upon me by the Mayo Clinic is that the average surgeon tries to take away too much prostate, and does not realize that what he recognizes as hypertrophy is in reality only inflammatory thickening. This he attempts to enucleate. The procedure is impossible. That trauma which it delivered to the vesical neck is removed when enucleation is confined to the gland itself.

As to the determination of which route shall be followed, I think that the surgeon should have an open

mind upon that question. In Jefferson Hospital about 95% of our prostatectomies are suprapubic; and I do not think our mortality rate has varied widely from that seen in other institutions. I have had as many cases of incontinence follow one method as the other. It is a "fifty-fifty" choice. Considering the preoperative care of prostatic cases, I do not mean to cast aspersions on the general surgeon. However, I believe that he sometimes errs in that he does not lay sufficient stress upon thorough previous study.

The practice in most hospitals has been study of the prostatic case by the urologist and subsequent enucleation by the general surgeon. The 10% mortality rate of which Dr. Randall speaks will be reduced when we realize that the man who is continually at work with the cystoscope is better able to judge the type of prostate with which he is dealing than the erstwhile cystoscopist, and, provided he has been surgically trained, will perform a better operation as a skilled urologic surgeon. To be a competent cystoscopist requires continuous use of the instrument and an accustomed eye properly to interpret the pictures seen in the bladder neck. The cystoscopic view is at times a misleading one, and the perfect instrument has not as yet been produced. Only last week I had this fact very forcibly brought home to me. The punch operation was tried in what seemed to be a case of mild middle lobe involvement, and without success. Suprapubic cystostomy revealed a large median lobe—a very different picture from that cystoscopically seen and I did an enucleation.

Dr. Thomas is correct with regard to the punch operation, in my opinion; and I have had one or two very serious results that arose as complications following its use. In the hands of the average surgeon the so-called closed punch operation is not a safe surgical procedure. It should, I think, be done openly, which provides for clear vision and the subsequent control of hemorrhage if necessary at the time of operation. I am not in favor of the fulguration of median bars.

DR. LEON HERMAN (Philadelphia, Pa.): I agree with Dr. Randall that, in the hands of the expert, both the perineal and suprapubic operations are attended with very excellent results. I cannot, however, endorse the statement that the primary mortality is a negligible factor in prostatic surgery. Dr. Randall's estimate of the average mortality rate is, I think, too low. We have found it to be, in a large series of collected cases, between twenty-five and thirty per cent. These cases were collected from sources that would be grouped under the term "average"; the latter was adopted to include the work of men who reported less than one hundred cases. Among those who had operated upon one hundred or more patients, the primary mortality rate was less than twenty per cent. Freyer of London, who performed more than 1,550 operations, had a mortality rate of 3½ per cent. The two-stage operation is one of the important factors in lowering mortality and decreasing operative morbidity, especially hemorrhage.

Patients are now being operated successfully who would have been hopeless risks ten years ago with the one stage technic. The most brilliant results are attained in aged patients with acute urinary retention by opening the bladder above under local anesthesia and subsequently removing the prostate under gas-oxygen anesthesia.

I must take issue with Dr. Randall as regards the part that injury to the internal vesical sphincter plays in postoperative incontinence. Under normal circumstances, the internal sphincter is the important factor in retaining the urine in the bladder. There is no vesical neck even when the bladder is greatly distended, as anyone can easily prove by observing the rounded outline of a normal cystogram. In the vast majority of cases of prostatic enlargement the prostate pushes aside this muscle and renders it impotent to hold the urine, which function is assumed and carried on successfully by the external sphincter. Under these circumstances prostatectomy adds nothing to the impotence of the internal sphincter which has long since been put out of commission by the enlarged prostate. In cases in which the prostate does not push aside the muscle to enter the bladder, but causes urinary obstruction by obliteration of the prostatic urethra, the internal sphincter remains intact, but any injury that may be done during prostatectomy is no greater than occurs in the ordinary case as the result of pressure of the intravesical portion of the enlarged prostate. For this reason I do not believe that this is of any importance in explaining postoperative morbidity. We have dilated the sphincter in cases of this kind and removed the prostate through the dilated orifice. The gland can be removed in cases of this kind with great ease through the perineum, but this will contribute nothing in the way of preventing morbidity.

Operative morbidity, aside from the acute complications such as hemorrhage, occurs, in our experience, in that group of cases in which obstructive symptoms are prominent in the absence of actual hypertrophy of the prostate. The pathology in these cases is inflammatory in the vast majority of instances. In the absence of definite obstruction or severe cystitis, the best procedure is dilatation. It is my impression that intra-urethral operations in cases of this kind are followed by evil results in so many instances that the greatest good would come to the greatest number by open operation. In proof of this I would recall to your attention the multiplicity of methods that have been devised for the treatment of this particular group of cases.

The study of large groups of cases collected from various sources indicates that the perineal operation is attended by far greater postoperative morbidity than is the suprapubic operation. This is explained first, by the greater difficulty of performing the perineal operation; second, by the failure to remove the obstruction completely; third, by injury to the sphincter mechanism; and fourth, by injury to the rectum. The suprapubic operation is a far safer procedure in the hands of the average man, and the results obtained far surpass those attending the infrapubic procedure.

DR. MOSES BEHREND (Philadelphia, Pa.): It seems to me that the general surgeon ought to defend himself on account of the things said here this morning. If the specialty of urology has been so specialized, as stated, why do they not reduce the mortality? It seems that before urology was specialized the mortality was less. Now we have so many urologists in the field, and yet the statement was made that the mortality is from 10 to 20%, which is entirely too great. Even if the general surgeon has not been taught the use of the cystoscope, all cases of enlarged prostate, before they are operated on, are cystoscoped by the urologist, and every case is given preliminary treatment such as has been outlined.

I have followed with great interest this question of prostatectomy because in 1902 I had my first perineal prostatectomy and did several after that, then changing to the suprapubic operation.

I agree with Dr. Herman that the indwelling catheter is an abomination and responsible for much infection and many deaths. Suprapubic cystostomy is the proper

course to pursue in cases of retention of urine. There are very few men who can stand the indwelling catheter for any length of time.

It seems to me that if a man has a profound knowledge of the anatomy of the perineum, he can do the perineal operation and he need not adhere entirely to the suprapubic route.

Dr. Alfred C. Wood (Philadelphia, Pa.): The chairman might remark that although perhaps he is classed as a general surgeon, he also has had some experience in prostatectomy, going back for 25 years, and like some other members present, has seen a great many changes of viewpoint. Opinions stated as facts have been very aggressively put forward, only to be forgotten as the years pass. Of course, the last word has not been spoken and will not be until the millenium. My own experience leads me definitely to the conclusion that in the vast majority of cases, in my hands, the suprapubic operation gives the best functional results and, of course, like any other operation, should be properly done.

All agree that there should be a selection of cases. It is freely admitted that certain cases should be operated upon through the perineal route.

There has not been a single case of incontinence of urine in my suprapubic cases, except in malignant disease. In many perineal cases I remember very well the difficulty in control that followed, so that one very prominent genito-urinary specialist of New York City had "classes" in his hospital for his post-perineal prostatectomies to teach them vesical control over again, and it was quite an experience to go and see the classes practicing every day under his commands. This has never seemed necessary in the suprapubic cases.

Dr. Randall (in closing): There are a great many things to answer in this discussion, but I am most anxious to make the points of my paper clear.

Dr. Behrend's defense is poorly taken. I understand him to ask that if the mortality and morbidity of prostatectomy is high why the specialist does not endeavor to reduce it, inferring that the progress in this line of surgical work has come from the general surgeon. Dr. Herman has already answered this question when quoting the statistics accumulated by Dr. G. S. Whiteside, who showed in 1915 that out of 1423 prostatectomies the mortality in the hands of urologists (who performed 820 of the operations) was less than 3%, while the remainder, operated upon by other surgeons of less experience in prostatectomy (although perhaps equally or more skillful in other forms of surgery) was 26%. Whiteside five years later repeated his statistical study and again proved this wide discrepancy. It is this complacent viewpoint, characteristically expressed by Dr. Behrend's remarks, of satisfaction with things as they are, that I wished especially to point out to you with the accent not on the mortality, so often recounted, but upon the failure to obtain even a successful operative result, where such was promised. My plea to-day is not one of criticism, but an effort to try to help you understand what these studies have taught me, and if I may be excused for so saying, to help teach you.

To answer Dr. Herman's remarks, I wish simply to state that you must draw a very distinct line between hypertrophy and other obstructive lesions. The punch instrument and operation was not designed for the relief of hypertrophy of the prostate. Its utility is distinctly limited to obstructive bar cases. These are caused by a sclerosis, probably following a chronic inflammation, and for this reason cannot be enucleated as hypertrophy can. I know of but one fatality following this operation and that in the hands of an inexperienced interne who damaged other structures than the vesical lip. It has a definite utility in selected cases, which again accentuates the point of my paper—thorough study of each individual case.

As regards the operation of prostatectomy: I believe 90% of all hypertrophied prostates can be successfully enucleated by either the suprapubic or perineal route, but in the other 10% the proper choice of approach will determine the question of whether or not a postoperative morbidity will ensue. I am lenient; in Dr. Deaver's recent statistics compiled by Dr. Herman, the morbidity figure is 24% for the suprapubic and 30% for the perineal route.

Dr. Herman thinks little of the importance of the internal sphincter following prostatectomy. I am convinced of its great importance for perfect postoperative function and plead for its careful handling and preservation. The continent patient one often sees after successful perineal prostatectomy speaks the whole truth concerning its physiological function and when such is present augurs a most perfect postoperative result. This is again the point of my paper that I wish to leave with you.

VOICE PRODUCTION*

WITH A FEW SUGGESTIONS FOR TREATING HOARSENESS AND LOSS OF VOICE IN SINGERS.

ROBERT F. RIDPATH, M.D.
PHILADELPHIA, PA.

Many papers and books have been written on the subject of voice, but very few have gone into the subject from the standpoint of the loss of voice from other sources than those of a pathological nature. It was with this in view that I finally decided to present for your consideration to-day, a paper dealing with this phase of the subject.

I originally intended to review the anatomy of the larynx, but decided that we had probably better shorten the paper by leaving it out.

Sufficient to say, vocal sound is produced by the vibration of the vocal cords. Voice is sound rounded and refined by the numerous resonators into the various tones. The mechanism of singing differs from speaking. In ordinary speaking, the range is about one-half an octave, whereas in singing it may go to two and one-half octaves.

Vibrations number from sixteen to thirty-two thousand per second. The thinness or thickness of the cords do not of themselves indicate whether the voice is soprano, tenor, contralto or bass, as many other elements enter into this particular scale. In ordinary speaking, the vocal cords are slightly apart and not in close apposition, whereas in the singing voice, they are in close apposition and in the higher tones even overlap.

*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

According to physiology, there are three positions of the vocal cords:

1st, Respiratory—that of inhalation. (The cords are widely separated.)

2d, Phonation—that of speech. (The cords almost approximate.)

3d, Cadaveric—that of death. (The cords are midway between phonation and respiration.)

To this, it seems to me, should be added a 4th position—that of singing.

The vocal membrane is attached to the aretynoid process posteriorly and the thyroid cartilage anteriorly, and it is due to the three motions of the aretynoids, that of forward, downward and inward, which permits the cords to be brought into a position of phonation. If the extrinsic muscles are then brought into play we have a tilting backward of the cricord cartilage to which the aretynoids are attached. This motion acts in the same manner as a key on a violin and tightens or stretches the cords. The tighter the cord the higher is the pitch. The quality depends on the control of the amount of air used and resonation.

The resonators consist of:

1, The sinus of Morgagni. It lies above the two true vocal cords (one on each side). The cavity is triangular with the apex above. Air pressure from below bulges the membrane of the cavity outward.

2, Epiglottis. Although numerous authorities have questioned the bending or folding of this cartilage, nevertheless in the vocally trained larynx, there is a bending in of the sides; thereby, with the aryepiglottic folds forming more of a tube than would otherwise be possible. Sound in this way is forced to hit the upper part of the crest, reflecting from there to the

3, Pharyngeal wall. This acts in a similar manner as the resonator of a band stand.

4, The buccal cavity.

5, Accessory sinuses of the nose.

6, Shape of the nose.

7, Teeth.

All of the resonators give roundness; tone flows out as waves instead of as sharp sounds.

The tongue does not belong to the group of resonators but acts as a former of words.

Voice characteristics differ widely. Some males have a high pitched voice, others a low pitched voice, illustrated by the tenor and basso; the same being characteristic of the female where we have the soprano or the contralto. Now what constitutes the difference? The difference is due to

1st, The position of the cords.

2d, The shape of the voice box or glottis. (This includes the epiglottis, larynx and the upper part of the trachea.)

The voice box is a tube, practically the same kind of a tube as a pipe organ, and it is within our power, by using the aryepiglottic folds of the membrane, to lengthen or shorten this tube in the same manner as a flute player shortens his flute by allowing the air to escape at the distal or proximal end, thus producing a higher or lower pitch. Just so is a vocal sound produced. The air is forced through the larynx from below upward. The pressure comes from below and as the compressed air meets the vocal cords, which are, according to the sound produced, approximating or nearly so, results in the tone made.

In ordinary respiration we breath through the nose. In speaking and singing we are unable to get sufficient air through this means and we use the mouth as an accessory.

In phonation, the anterior one-third and the posterior one-third of the cords approximate, with the chink or separation in the middle third. In singing, as stated before, the cords approximate or may overlap.

One of the most frequent causes of loss of voice or the lowering of the pitch and tone of a singer's voice is due to incorrect breathing. It is remarkable the number of vocal teachers who utterly, either through ignorance or the wish to produce a singer quickly, fail to teach their pupil the necessity of proper breathing.

To quote Behuke—"Breathing goes on regularly while the voice is silent, but in speaking and singing both inspiration and expiration have to be regulated according to the nature of the phrases to be spoken or sung. If the speaker does not know how to take breath and how to control the expiration, his delivery will of necessity, be jerky and uncertain."

In the singer it is even more important that he should be able to fill his lungs well and have absolute command over his expiration, for while the speaker can arrange his sentences, the singer is bound by the music before him.

One of the best vocal teachers we have today lays so much importance to correct breathing that he drills his pupils for two or three months in this alone before he permits them to utter a single sound.

Sir Morrell Mackenzie says—"As regards the blast, the great object to be aimed at is that no air shall be wasted or expended unproductively. Just the same amount required for the particular effect in view must be used. Too strong a current tends to raise the pitch, a result which can only be prevented by extra tension of the vocal cords, which of course entails unnecessary strain. Or the air may be sent up with such velocity that some of it 'leaks' through before the glottis has time to intercept it, with such violence as to force the lips of the chink a little too far apart."

It is decidely wrong to train the voice at its maximum intensity. Rather aim at purity and sweetness than volume. This will come of its own volition if it is there. The breathing should be so much under control, and so entirely transformed into sound that the flame of a candle at a distance of twelve inches from the performer's mouth should not flicker as he sings. This is one of the best tests of whether the voice is being properly used.

A singer with a trained voice sings through the nose to get the head sound. The untrained singer sings through the mouth and we have the throaty sound. All the tones of a singer should be felt through the nose. The singers voice not only must be under absolute control but must coincide with his actions. Everybody can sing, but not all can be opera singers. The voice cannot be produced but it can be improved. Great singers must be trained. It takes six years to produce an operatic singer, provided he has the voice.

There are several methods of cultivation of the voice. The majority of vocal teachers use the Italian method, in which the scholar is told to fill the chest with air, immobilize the chest, stand upright and use the diaphragm. The power of force is just the quantity of air thrown through the glottis that is needed and it is accomplished through control with the diaphragm. The contraction of the recti muscles force out the quantity of air desired and when all the air is exhausted, the chest is filled up and in a fraction of a second the air needed is inspired. The exact amount of air needed is allowed to go out and none is wasted as with us. The control is by the diaphragm and the intercostal muscles are fixed except when all the air is exhausted.

Falsetto Voice: This is a false voice and is produced when the cords are not together. It is the highest voice we have in the male. The cords are further apart than in the speaking voice. It is due to their ability to make the anterior third of the cords vibrate without the posterior. It is only possible in some and usually in the fat, tall, robust man.

Practical Points: Singers and speakers, especially those who use their voices nightly, may become hoarse or lose their voices entirely. Their living and profession is jeopardized, they must use the voice or their contract is forfeited. What is to be done? Examination of the throat and larynx may not reveal anything abnormal or pathological. The cords may show a slight redness or not. Many singers have thick red cords normally.

1. The first thing to do is to procure a complete history of the length of time the patient has been singing or speaking.

2. Their training (how long they took vocal lessons.)

3. What is the character of the voice?

4. Did the aphonia come on quickly or gradually?

5. With a cold or not?

Naturally if we have a pathological condition as the cause, proper remedial agents and treatment should be instituted.

Let us take up the causes in the order given.

1st, Length of time the patient has been singing. All vocal teachers recommend a rest to the voice at least one day every week. Many of these patients not only sing during their regular appearance but after the performance. They sing for those entertaining them, thus bringing extra work to the cords, for it must be remembered that a singer or speaker must of necessity run over his part sometime during the day, and unfortunately too many times this is after a heavy meal when the diaphragm cannot be used at its best, thus compelling the artist to bring more pressure on the cords to produce the tone desired, with a consequent strain.

2d and 3d, Their training. This and the third (What is the character of the voice?) had better be considered together. Do they breathe properly? In the first part of the paper I have tried to point out the necessity of the proper method to be used. Are they overstimulating the cords by extra efforts to produce tones or sounds of a higher pitch than is normal for their particular throat. Have they been trained wrongly, their teacher producing or trying to produce a soprano when the scholar has a contralto voice or vice-versa? Likewise in the male is a baritone straining his cords, larynx and resonators to sing base or tenor? Is the patient physically below normal? Many other conditions must be taken into consideration besides the voice.

4th, The quickness of the onset. Vocalists who sing too high tones will gradually lose the voice. This usually takes place after they have vocalized nine months to one year. Should the voice be lowered suddenly, there will usually be found a slight hemorrhage on the cord with some swelling of the surrounding tissue.

5th, With a cold or not? Naturally if the patient has a cold with loss of voice we know the cause—and the treatment should be directed from that standpoint. If without a cold I have tried to enumerate some of the causes.

Singers may have enlarged and diseased tonsils and the advisability of removal must be determined. Removal changes the voice, as giving a lower pitch, or may even ruin it, as singers

with tonsils have been trained with the tonsils as part of their singing mechanism. If sufficiently diseased, advise removal but warn them that the voice will change to a lower or higher pitch and after the operation they must have the voice retrained and replaced since the operation has changed the shape of the cavity. Be careful to remove only the tonsils and avoid the surrounding structures, since damage to the pillars may ruin the singing voice entirely.

A patient may come with a chink in the center of the cord. This is not a paralysis. Again he has exercised the voice in the wrong way. Maybe in the case of a bass or a baritone singer he should sing a higher part. The voice does not tighten the cords as it should and they lose some of their tension.

In all singers who have become hoarse or who have lost the voice, rest should be a feature of the treatment. Complete rest will not be necessary very often, but a change will be decidedly more beneficial, such as humming through a comb covered with tissue paper, this changing the character of the tone and exercising the cords and resonators.

Singers Nodules: This is a bulging in the region of the anterior portion of the cords. It is traumatic. If it is not too far advanced it can be cured by changing the voice; not by rest but by exercise. Have the patient hum by singing "Ney, Hey, etc." by bringing the tongue inside the teeth with the lips closed and recommend the patient to do this for 10 minutes four times daily. Give the patient 3 drops of dilute nitric acid on a lump of sugar ½ hour before going on the stage. Inhalation, lozenges and tablets are of little use in these cases.

DISCUSSION

DR. MATTHEW S. ERSNER (Philadelphia, Pa.): Dr. Ridpath is to be congratulated on the splendid manner in which he has presented his paper and especially the type of subject he has chosen. Many of us are living in large cities and cosmopolitan centers where there are hundreds and probably thousands of students who are striving to become opera singers and suddenly awaken to the fact that they are not progressing, that there is something lacking in their singing. They naturally come for aid to their physician and among them the laryngologist stands foremost. He cannot advise the singer unless he hears him sing. If the singing method is wrong he should suggest change of teachers. If he sees that there is no voice at all he should frankly tell the student to cease with his studies. Many young people who are ambitious or what we might call "stage struck" and who do not have a voice that is capable of developing into a great one, are induced by teachers who are not really conscientious teachers but who are charlatans, to believe that they have the makings of a great voice. The student, after months of study begins to realize and looks for trouble in the throat, and it is at this time that he goes to consult with the laryngologists. It is therefore up to the laryngologist to help suppress the charlatans of this profession.

There are two methods of teaching singing at present. One is the Italian method, which is the natural method of singing. The Italians had a very different idea from that described by Dr. Ridpath. He, I think, has confused it with the Garcia method, introduced about 1854. The Italians never paid any attention to breathing. I do not see how anyone can sing if he or she is trying to control the diaphragm and at the same time carry out the message of the composer, plus the individual and the personal sentiment in interpretation. The Italians paid little attention to the physical side of singing but developed the mind of the singer to control the breath just as naturally as one does while speaking.

Garcia discovered the laryngeal mirror and developed the physical teaching in connection with the voice. As long as the voice is at a certain pitch, no matter what tone, the larynx remains motionless. The open voice is simply the natural tone, a tone which is sung by instinct. To illustrate, the teacher will say "Open the mouth to sing." The nasal voice may be of two varieties, the obstructive or the muffled voice, or the voice where there is a great volume of air escaping through the nasopharynx into the nose. Should there be any mechanical interference in the form of obstruction, that should, by all means, be corrected, if the voice by scientific means has not already been placed. The guttural voice is due to tightening of the muscles. For some reason or other the German singer has a tendency to sing so.

The voice has a much higher and greater mission to accomplish than mere concentration on the physical phases. It is the voice that interprets the soul of the composer and brings out all the emotional features. It is a generally received idea that a singer's life is a merry one. One should study for individual pleasure and accomplishment and not think of the voice as the basis for an operatic career. It is my belief that singers are born and not made. By that I mean that a born singer does not require study. On the contrary it is the born singer who requires conscientious study, energy and time to perfect the voice. On the other hand, it is impossible to make a singer, no matter how much scientific study is put into the voice. All voices are not physically and physiologically adaptable for a career if the voice does not show natural singing instinct. No gold could repay the disappointment of a singer's life when once his dreams are shattered. The charlatan's theory of building air castles into the vocal student's mind will soon burst into bubbles.

DR. ROBERT A. KEILTY (Danville, Pa.): Being a pathologist, I hesitate to discuss voice production, but I can't help but take two minutes to bring out some practical experience. I have in my own family a sister who has just made her debut in opera in Italy. We have gone through the gauntlet of all sorts of experiences. She has been trained in New York. I should like to disagree entirely with the last speaker when he says that singing has nothing to do with respiration. Instead of respiration riding the voice, by practice the act becomes quite mechanical. As a matter of fact the well-trained singer is able to produce a bulging of the abdomen by means of the diaphragm equal to more than four inches. Most of her voice volume and her long sustained notes are the result of diaphragramatic action. It is just as mechanical in the singer in voice production as it is in us in ordinary breathing, but it only comes after years of practice. Of course, the singer has the quality to begin with, but diaphragamatic action develops the volume. Through these exercises and breathing the opera singer has the volume which enables her to fill a large opera house and marks her as

different from the singer with voice quality who is only able to fill an ordinary room.

Another point mentioned was what can be done in the throat. This is a subject which gives every singer concern and which calls for rare judgment on the part of the nose and throat men. In my sister's case, we have had all the experiences from recommendations for complete tonsillectomy to daily nose and throat treatments. I am very grateful to two of my Philadelphia friends for their advice to let well enough alone. After a very annoying experience with treatments in New York which were advised two or three times a week, my sister has been able to appear on an average of three times a week for the past two years without any treatments whatsoever. In the absence of pathological lesions and with a pale throat and small tonsils, if that individual is a singer, the less the throat is disturbed the better the quality of the voice will be. Finally, after the vocal tones have been placed and adapted to the music box of the mouth, tonsillectomy is quite apt to upset entirely the voice character and should never be performed except where the tonsillar disease is very grave.

Dr. Ridpath (in closing): I know this is a new subject to bring before the Society but I believe it is one in which everybody should be interested. I think, of course, that Dr. Ersner is wrong, and Dr. Keilty and I are right about the breathing being the important thing in singers. When the intercostal muscles are used in the case of singers they are apt to produce rough and jerky tones. Singers become accustomed to using the diaphragm and the abdominal muscles and their chests are always filled. You all have heard operatic singers and wondered how they could produce and sustain the high notes and pitch for such an extended time. This is due to their control of the diaphragm and belly muscles.

COMMUNICATIONS

To the Secretaries of the 63 Component County Societies of the Medical Society of the State of Pennsylvania:

Dear Secretary: This communication voices the resolutions of the American Medical Association and the expressed wish of the Medical Society of the State of Pennsylvania that every member of the medical profession should become active in the campaign for periodic examinations of the healthy, or apparently healthy. These examinations are for the purpose of preventing them from getting sick by detecting tendencies or lesions and having them corrected, by prolonging life and making it more useful.

The method proposed is as follows, a method which should receive the sanction and active support of your County Medical Society and of every member therein:

Each doctor should write a personal note to patients he has not examined recently, suggesting that they come for a health examination to determine just where they stand, and stating that he is writing in compliance with the expressed wish of the American Medical Association, the State Medical Society and other public health agencies.

These examinations should be repeated frequently during infancy and at or past middle age, how frequently each doctor can decide as the individual presents himself.

Appended you will find a brief outline of the minimum requirements for such an examination. In individual cases special lines of investigation will be needed, often requiring laboratory help, and it is suggested that your Society formulate and arrange for such of these as may be needed.

For these health examinations your County Medical Society could properly fix the charge, which, of course, would not include the special examinations. For those too poor to pay, your Society could arrange with the hospitals or other institutions. It is desirable that this effort should be conducted by organized medicine, free from the taint of commercialism, and yet not putting upon doctors, already heavily overladen, an added burden bringing no compensation other than that of serving others.

As a part of the activity of your Society, one or more members should be appointed to conduct a publicity campaign, who will have the need of these examinations carried to the people by the Church, the Schools, the Newspapers, Labor and Fraternal Organizations and Big Business.

The number of these preventive examinations should be reported at each meeting and the gross number sent to the Secretary of the Committee undersigned.

GENERAL INDICES FOR HEALTH EXAMINATIONS

MINIMUM REQUIREMENTS

1. The examination should preferably be made in the afternoon, and in both standing and sitting positions.
2. The personal history, including height, weight, occupation, previous illnesses, etc., should be satisfactory.
3. Inquiry should be made into the family history.
4. The personal habits—exercise, recreation, diet, etc. should be healthful; rest and sleep regular.
5. Mental condition should be normal, and if not, an effort should be made to determine the cause.
6. Posture should be erect without effort, chest high, abdomen held well in. No malformations.
7. No painful feet; shoes well fitted.
8. A temperature above 99° F. or 37.2° C. would arouse suspicion of infection—other things being ruled out, possibly tuberculosis.
9. The appetite should be good, bowels regular, and tongue clean. No loss of weight.
10. Heart regular, with no murmurs. After hopping 25 times on one foot, the heart should return to normal in 2 minutes.
11. No shortness of breath on slight exertion.
12. Blood-pressure should not exceed systolic 145, diastolic 80.
13. Chest free from râles and abnormal breathing sounds. Respiration about 18 to the minute.

14. There should be absence of dullness over chest area, except over heart and liver.
15. Liver normal in size and free from tenderness and hardness.
16. Palpation of abdomen should reveal freedom from tenderness and absence of tumors.
17. No hernia—umbilical, inguinal or femoral.
18. Urine should be yellowish or amber, with a specific gravity of 1.015 to 1.025. The specimen should be taken from the mixed urine of 24 hours. An average of three pints is normal.
19. There should be no albumin or sugar. Hellar test for albumin; Fehling or Benedict's for sugar.
20. No gout or rheumatism and no persistent headaches.
21. Inflammatory conditions known to result from focal infections indicate general impairment of health, and so-called rheumatic conditions of nerves, muscles and joints, for which no definite cause can be assigned, call for a careful search for focal infection — teeth, tonsils, sinuses, appendix, gallbladder, intestines, genito-urinary tract.
22. No pyorrhea or alveolar abscess.
23. No adenoids, no enlarged or inflamed tonsils, no frequently recurring sore throat.
24. No large lymph nodes in the neck or elsewhere, no enlargement of the thyroid or other glands.
25. The hearing should be normal. No running of the ears, no tenderness over the mastoids, no history of sinusitis. The nasal passages should be clean and nasal breathing habitual.
26. The vision should be normal or corrected with glasses.
27. The teeth should be carefully cared for by a competent dentist.
28. The skin should be moist, elastic and free from eruptions; the muscles firm and normally developed.
29. No venereal disease.
30. No absence of pupillary reaction to direct light (an early symptom of tabes).
31. The patellar tendon reflex should be normal.
32. No prominent varicocele, no hydrocele, no prominent varicose veins.
33. No hemorrhoids, no fistula or fissure.
34. In the female, if postpubertal, menstruation should be regular. Menopause characterized by long intervals between menstruation, with no discharge in the intervals.
35. There should be no suspicion of disease of the breasts, uterus, or ovaries, or, if a mother, of lacerated perineum.

In Pennsylvania during 1922, the death toll of kidney disease was 9,155, of tuberculosis 7,940, of diabetes 1,414, of cancer 7,759, and of various forms of heart disease 16,107. All of these, if detected early, may be retarded, arrested or even cured.

The examination should be followed by correction of existing irregularities, correction of faulty living — regulation of diet, exercise, etc.—and reference, when indicated, to a well-trained specialist—dentist, lung or heart specialist, or whatever may be needed.

Frequent findings needing treatment are faulty vision, teeth, tonsils, adenoids, circulatory disorders, pulmonary affections, malnutrition, constipation, and in women, menstrual irregularities or lacerations.

The examining physician should make notes for future reference.

EDWARD MARTIN, *Chairman,*
FREDERICK L. VAN SICKLE, *Secretary,*
For the Committee on Public Relations.

NEW AND NONOFFICIAL REMEDIES

SKIABARYT FOR ORAL ADMINISTRATION.—A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent mixed with sugar, tragacanth, vanillin, cinnamon and cacao. A smooth mixture is made with water and this is then ready for drinking. Merck & Co., New York City. (*Jour. A. M. A.,* May 12, 1923, p. 1381.)

SKIABARYT FOR RECTAL ADMINISTRATION.—A mixture of Barium Sulphate—Merck for X-Ray Diagnosis, 75 to 85 per cent admixed with sugar, tragacanth, vanillin and cinnamon. A smooth paste is formed by addition of water and it is then ready for administration through the irrigator. Merck & Co., New York City. (*Jour. A. M. A.,* May 12, 1923, p. 1381.)

NEUTRAL ACRIFLAVINE—ABBOTT.—A brand of neutral acriflavine—N. N. R.—It is sold in substance and also in the form of Tablets Neutral Acriflavine—Abbott, 0.03 Gm. and Enteric Coated Tablets Neutral Acriflavine—Abbott, 0.03 Gm. The Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.,* May 19, 1923, p. 1455.)

QUININE ETHYL CARBONATE.—The quinine ester of ethyl carbonic acid. Quinine ethyl carbonate was first introduced as euquinine. It is used in place of quinine sulphate and similar soluble quinine salts when a practically tasteless quinine compound is preferred.

ARSPHENAMINE—MALLINCKRODT. — A brand of arsphenamine—N. N. R. (See *New and Nonofficial Remedies,* 1923, p. 46.) It is marketed in ampules containing respectively, 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., 0.6 Gm. and 1.0 Gm. Mallinckrodt Chemical Works, St. Louis, Mo.

CINCHOPHEN—M. C. W.—A brand of cinchophen—N. N. R. (See *New and Nonofficial Remedies,* 1923, p. 90.) Mallinckrodt Chemical Works, St. Louis, Mo.

MERCURIC CYANIDE—M. C. W.—A brand of mercuric cyanide—N. N. R. (See *New and Nonofficial Remedies,* 1923, p. 194.) Mallinckrodt Chemical Works, St. Louis, Mo. (*Jour. A. M. A.,* June 16, 1923, p. 1775.)

ILETIN (INSULIN—LILLY).—A brand of insulin. (See *Jour. A. M. A.,* June 2, 1923, p. 1617.) It is marketed in 5 Cc. ampules containing 10 units in each Cc., and in 5 Cc. ampules containing 20 units in each Cc. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.,* June 23, 1923, p. 1851.)

EPINEPHRIN CHLORIDE SOLUTION—ABBOTT.—A solution containing epinephrin chloride, equivalent to 1 part of epinephrin in 1,000 parts of physiological solution of sodium chloride, preserved by the addition of benzoic acid and saturation with carbon dioxide. For a discussion of the actions, uses and dosage of epinephrin, see *New and Nonofficial Remedies,* 1923, p. 112. Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.,* June 30, 1923, p. 1910.)

CALCIUM THERAPY IN TUBERCULOSIS.—From a review of the literature, Mayer and Wells concluded that there is no convincing clinical evidence of the value of calcium administration in tuberculosis. They believe that no deficiency in blood calcium exists in tuberculosis patients. From carefully controlled animal experiments these investigators conclude that calcium administration does not affect the course of tuberculosis in animals. If the use of calcium compounds in the treatment of tuberculosis is to be continued, clinical experiments of a scientific character should be conducted. At the present time there appears to be no scientific basis for the use of calcium in tuberculosis. (*Jour. A. M. A.,* June 2, 1923, p. 1619.)



HOWARD C. FRONTZ, M.D.

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SEPTEMBER, 1923

EDITORIALS

PRESIDENT-ELECT FRONTZ

Howard Clinton Frontz, President-Elect of the Medical Society of the State of Pennsylvania was born in Hughesville, Lycoming County, Pennsylvania, September 8, 1871, the son of George Clinton and Emma Kistner Frontz; his ancestry being of Swiss extraction but for several generations resident in Lycoming County. He attended Pennsylvania College at Gettysburg, Pa., from 1887 to 1890 and was a member of Alpha Tau Omega fraternity at that place. He studied medicine at the University of Pennsylvania, was a member of the Stille Medical Society during his undergraduate days, and received his medical degree from that school in 1894. Following his graduation he was resident physician at the Williamsport City Hospital till July, 1895. and from that time until 1908 he was physician to the Pennsylvania Industrial Reformatory at Huntingdon.

Since 1908 Dr. Frontz has been engaged in the general practice of medicine and surgery in Huntingdon. He has been an attending surgeon, a trustee, chairman of the training school committee of the Blair Memorial Hospital since its inception in 1909, and holds numerous appointments from railroads and industrial plants in central Pennsylvaia. He has been County Medical Director for Huntingdon County and physician in charge of Clinic 47, Pennsylvania Department of Health, since 1908, and is a member of the Advisory Board of the Pennsylvania Department of Health and of the Board of Trustees of the Pennsylvania Industrial Reformatory. During the entire period of the World War he was secretary and examining physician on the local Board of Selective Service for the County of Huntingdon.

Dr. Frontz has served in the Huntingdon County Medical Society as president in 1897, from 1902 to 1911 as secretary, and as a frequent contributor of scientific papers. He has served the Medical Society of the State of Pennsylvania as secretary of the nominating committee at the 1896 session, frequently in the house of delegates, and from 1918 to 1922 as Trustee and Councilor for the Fifth District. During the year since October, 1922, President-Elect Frontz has traveled widely over the state in response to numerous invitations to attend meetings of the component county societies. He holds Fellowship in the American Medical Association, the American Public Health Association, and the American College of Surgeons.

In 1895 Dr. Frontz married in Hughesville, Pa., Miss Agnes Springer, who died in 1900. In 1903 he married Miss Jessie Akers, of Huntingdon, a talented vocalist and a woman of charming personality. There are three children, a son and a daughter by the first marriage and a son by the later marriage.

Dr. Frontz is prominent in the Masonic Fraternity, holding past official honors in the lodge, chapter, and commandery, and for the past twelve years has been District Deputy Grand Master of the 34th District, Grand Lodge of Pennsylvania, Free and Accepted Masons. He is a Rotarian, a member of the Huntingdon Club, the Huntingdon Country Club, a Lutheran, and a Republican. C. G. B.

THE ANNUAL CONVENTION

Not one physician in the state can really afford to miss the annual convention of the State Medical Society. Each individual must make the decision which it is hoped will be a favorable

one, so as to be numbered among those present at Pittsburgh from October 1st to 4th.

It is rather hard to sit down, especially when tired and desiring relaxation, to try and read the new books and periodicals and keep abreast of the times. The Medical Society was formed to help all. The papers in the general meeting and in the various sections on special subjects cover the whole field of medical progress. Examine the program and choose the subjects you want to hear read and discussed, and you will have an excellent postgraduate course and in addition the pleasure of renewing old acquaintances and forming new ones.

The officers of the State Society and the Allegheny County Society are bending every effort to give all visitors a thoroughly enjoyable and instructive week. Make your reservations early.

G. H. C.

OVERTURES TO THE HOUSE OF DELEGATES

The Secretaries of the County Medical Societies are reminded that now is the time for them to review the minutes of meetings held since the last session of the State Society so that they may put in concrete form any action of the local society which it is desired to present at the next State meeting which will be held in Pittsburgh on October 1-4, 1923.

It would not be amiss to have an account of such action forwarded to the State Secretary at once so that general discussion of various topics may be had preliminary to the time of the meeting.

A. C. M.

OUR EDITORIAL STAFF

No matter how much a man "hates himself" editorially, he must realize that the task of editing this JOURNAL is by no means a one-man job, that it is a job for the combined efforts of the many who have at heart the interest of the publication.

As we look back over the past year, we feel that the *Pennsylvania Medical Journal,* more recently the ATLANTIC MEDICAL JOURNAL, has improved in its editorial output over that of the last few years. The silent reverence with which our many readers peruse its pages—silent because we seldom hear from them—is the indubitable proof from which we gain the satisfaction of knowing that our work is appreciated! This satisfaction might not be sufficient for those who prefer a more outspoken opinion; Nevertheless we believe that the work of the past year has not gone for naught.

At this point we wish to pause and express to the Assistant and Associate Editors of the new ATLANTIC MEDICAL JOURNAL our most sincere thanks for their splendid coöperation with the Editor and the Committee on Publication in the work of the JOURNAL, for their many well-written, instructive and entertaining editorials presented during the past year. Were it possible to offer a more substantial remuneration than our thanks, it would afford us much pleasure thus to reward our friends and colaborers. We trust that our staff will not weary in well doing, but will make the future of the JOURNAL brighter than the past by greater achievements in their editorial output.

CAMPING GROUNDS FOR TOURISTS

Many cities and towns located on the main automobile highway lines have set aside camping grounds for tourists which, at this season of the year, are bound to be well patronized.

It is very important that location of such sites shall be made with the view of avoiding possible contamination of water sheds that may in turn convey infection to communities which draw their water supply therefrom. This matter is of great importance and should be acted upon by the County Medical Societies in coöperation with the local health officers. It would also seem to be advisable for the State Commissioner of Health to have such camping grounds inspected by State Inspectors.

A. C. M.

THE PRESIDENT'S HEALTH

Certain periodicals have recently published pictures of a number of our Presidents, showing them when they assumed the Presidency and at the end of their terms. Naturally a man of fifty years plus would age to some extent in four to eight years, but we must admit that the mere passing of time would not account for the change in any of these men.

It has been charged that as truly as McKinley was martyred, so also was Harding martyred by the constant heckling that we kind-hearted Americans hold as one of the rights accorded us by our traditional liberty—martyred by the constant opposition and misrepresentation of his motives and accomplishments, by the obstructive tactics so often employed by his political opponents, by the ever present criticism that we have become accustomed to think of as the natural atmosphere surrounding our President. Surely we, his constituents, have something to answer for; but in the meantime, until we can

learn to show more respect for the office (if not for the officer) once the President has taken his oath, until we can learn that freedom does not mean freedom to make our lawfully elected representatives miserable, to hamper their plans for government, to torment them until life becomes so impossible that even a strong constitution must feel the terrible strain, and a weaker one must break—until that time, what can be done to lessen the casualties in the Presidency?

Politicians have come forward with a proposition to limit tenure of the office to one term, giving as their reason the terrific strain under which the President labors. This is one possible solution of the problem. Another might be to lower the age of eligibility. This is the young man's age, not because the young man is as competent mentally to deal with the vexatious problems that every man in public life has to meet, but because the young man is stronger physically and therefore better able to cope with the growing strenuosity of public office. Other solutions may be suggested, but after all, is this not in a sense, a question of public health, is it not a question for the doctor to answer? A sick President cannot be a competent President, and in matters of health, individual or public, it is surely the province of the physician to advise.

Sooner or later this problem must be solved. Let us turn it over in our minds, both as loyal citizens and as physicians, and when the time comes for the decision to be made, we can then speak with the authority of knowledge and be ready to present definite recommendations.

AN APPEAL TO RETURN

A constant warfare is being waged between the old and the new; constantly the old is being replaced by the new; but occasionally the new does not work out and is discarded, with a consequent reversion to nihilism or a return to the old.

What is taking place throughout our social structure is also taking place in medicine, and we purpose citing as examples the well-known and formerly much-used drugs, quinine and Dover's powder.

Quinine is obtained from the bark of Cinchona calisaya and Cinchona officinalis, and of hybrids of these and other species of Cinchona (Rubiacæ) containing not less than 5 per cent of the total alkaloids and at least 2.5 per cent of quinine.

Quininae Sulphas (U. S. P.) is most frequently used. Quininae Hydrochloras (U. S. P.) is, however, a more easily assimilated form of quinine, but without some of the more potent therapeutic effects. The dosage of quinine sulphate is given as 1 grain to 1 drachm. The physiological action of quinine is well known to the profession, and it is not necessary to call attention to all the physiologic actions of these drugs.

Dover's powder (Pulvis Ipecacuanhae et Opii, U. S. P.) consists of one grain each of powdered ipecac and opium, and 8 parts of sugar of milk. The average dose is grains 10. Its physiologic effects are also well known to the profession.

The older practitioners of medicine relied largely upon quinine and Dover's powder to relieve many of the acute febrile conditions, as well as to treat many other complications of disease in which these remedies were indicated. But what a change has taken place in therapeutics during the past two decades! With the discovery and introduction of the coal tar products, synthetic preparations were accepted and placed on the market to reduce temperature as well as to abort incipient colds. With the development of pharmacology, the alkaloids of opium have taken the place of the old time Dover's powder formula. These preparations are more palatable to take and more prompt in their effect, but are they more to be desired in the real results which we wish to obtain?

Quinine is yet the specific for malaria and no doubt always will remain so. Quinine, however, is not the most pleasant remedy, but it has such physiological actions that it is doubtful if as good effects can be obtained by any other remedy, especially remedies of the coal tar group.

It is a well-known fact that many of the younger members of the profession are becoming therapeutic nihilists, perhaps because of the fact that older remedies have been abandoned, while those who have been in the practice of medicine for many years are quite positive these neglected remedies are of great benefit. Old drug friends have been cherished by the older members of the profession, and it is a well-known fact that the newer preparations are not so constant and are more frequently changed in therapeutic use.

Would it not be wise for us to retrace our steps and study more carefully remedies that were used extensively some years ago, bringing them again to the front in the treatment of disease? We are quite sure that a more careful analysis of some remedies which have been relegated to the rear in medical use could have a place in the present therapeutic treatment of disease were they better understood and more frequently used.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE COUNTRY DOCTOR; WHAT OF HIM?

For some years the trend of physicians has been to the city and large town, and from the present outlook the old time country doctor will soon be, if he is not already, a thing of the past. The country and small town have little or no attraction for the recent graduate, and if through force of circumstances he locates in the country he seizes the first opportunity to leave the country for the city, hence the cities are often overcrowded and the country places suffer for want of doctors. There are plenty of doctors to supply all the necessities of the public, but they are not properly distributed; some localities have too many, others not enough. And right here let me say that a pernicious idea has arisen, fostered by some medical men who ought to know better and originating in the fact that some rural communities are lacking in competent medical service, that there is a great dearth of physicians and that something radical must be done to correct the alleged evil. This idea has gone so far that law-makers have gravely considered the advisability of enacting laws looking toward the lowering of the requirements for the medical degree and making a lower standard for physicians desiring to practice in the rural districts. This is bad enough, but worse than this the votaries of the various healing cults, Osteopaths, Chiropractors and all that sort of thing, have exploited the idea in order to get full privilege to practice medicine without the necessary medical training and preliminary education. It is the plain duty of medical men and the medical press to disabuse the minds of the profession of this pernicious doctrine and through them to educate the public to the fact that there are enough medical men but that they are not properly distributed.

The old time country doctor had his problems and they were serious enough, but they were very different from the ones that confront the modern physician who locates in the country to-day. As a rule he was assured of a living from the start, and although his fees were small and were often paid in produce, they were sufficient for his necessities. The cost of living was moderate and his other expenses were not great. One or at most two horses, a saddle, and if his exchequer afforded it, a buggy, furnished the necessary transportation. Educational demands were not great, the country school and perhaps a term or two at an academy was sufficient preliminary education for the study of medicine, and this, supplemented by "reading" medicine with a practicing physician known as a "preceptor," constituted all that was necessary in order to matriculate at a medical college. Parenthetically it seems to me that a mistake was made when the preceptor was dropped as a part of the training of the medical student. The necessary expense of acquiring a medical education was vastly less than it is now. One or two terms of four months each at the "Lectures" was sufficient to enable the candidate to practice medicine. (A degree was not always sought or obtained.) Compare this with the requirements for obtaining a medical degree to-day. A high school and college preliminary education, four years in medical school, a year in a hospital and a state board examination—all this at an expense of at least twenty times the cost of the old time doctor's education. The old time doctor's work was hard but his standing in his community was high and his lot was a rather pleasant one.

The situation to-day is quite different. The problems of the modern country doctor and of the student who expects to take up country practice are many and complex. Some of these problems are here mentioned and an attempt made along the line of their solution. As intimated, a very important problem for the student of medicine is the cost of a medical education, but that is a problem for individual solution.

Another important problem is the question of fees. The cost of living has greatly increased. Food, clothing, rent, equipment, transportation, the education of his children, the cost of his medical education (for a part of which perhaps he is in debt) all have increased in a much greater ratio than have his fees. We may ask why have his fees not increased as they should? The answer is that his practice is among farmers and farm laborers. The business of farming is in a very depressed state. The farmer is not making a living. He is not able to command the best labor, sometimes no labor at all, and his crops are damaged or are lost for want of help to harvest them. The price of farm produce is at a low ebb, and in many cases below the actual cost of production, and the farmer, after paying for such help as he can get and for the absolute necessaries of life for himself and family, has nothing left to pay the doctor adequate fees, so that he is the last one paid and frequently is never paid. The farm laborer is in even worse straits than is the farmer himself and as a result the country doctor is in a chronic state of financial embarrassment and cannot help himself abreast of the profession to say nothing of at-

tending postgraduate courses and medical conventions.

Transportation is one of his problems that at first sight would appear is solved by the automobile, but the automobile has only added to his expenses. No one cares to-day to employ a doctor who does not own a motor car even if it be only a flivver. The motor car is quite the thing in summer when the roads are at least passable, but in winter, when the roads which most rural communities provide are often impassable for horse and buggy, the use of the automobile is out of the question and the doctor must have in addition to his machine a team of horses and a buggy, thus doubling his necessary traveling expenses. The city doctor can visit his patients at less than half the expense of the country physician. The automobile is in some respects an actual detriment to the rural doctor. For instance: he can cover a much wider territory in summer than he can in winter, and patrons who employ him in summer resent the fact that he cannot attend them in winter and he loses their patronage. Another thing is that the well-to-do among his patients who possess automobiles will often drive to some distant doctor, perhaps some self-styled specialist and pay him a good fee that by rights should go to the home doctor who, nine times out of ten, would render better service than the "specialist." And further, there is a very reprehensible practice growing up among city physicians which consists of underhand if not direct solicitation of the practice of the wealthier families of the country doctor. This is a much greater evil than that of fee-splitting of which we have heard so much in the past, and it is much more detrimental to the country doctor.

The hospital question is a vital one. As it is now, if the country doctor takes a patient to a hospital in the city the surgeon gets the big fee, and after the hospital costs are paid there is often little or nothing for the home doctor. Worse still, some surgeons try to retain the patient and very often succeed, thus cutting in on the doctor's already scanty income.

Another problem is the education of the doctor's children. You say there are many high schools in the rural districts. True; but when you have said high school you have said all there is to be said of them. So it is not correct to say he has high school opportunities for his children, let alone those of college or university. The latter are beyond his means. All he really has is the common school.

Then there is the lack of loyalty among his clientele. They visit specialists, so-called, when the roads are good and the weather is fair, and pay cash; but when the nights are dark, the roads bad and the weather inclement, they call the home doctor and perhaps never pay him. The following has been known to occur. The home doctor is called in the night (the other fellow will not travel to the country at night) and when the home doctor calls on his patient the next day he finds the other doctor in charge of the case. This is the kind of loyalty he has to contend with. These are some of the reasons why so many cross-roads and country villages have no doctor. They have no one to blame but themselves. Within twenty miles of this place there are half a dozen villages that formerly supported from one to three doctors that are without a physician to-day.

To recapitulate: The reasons why the country doctor will not stay in the country are these: the inadequate fees, the bad roads, the hard work, the lack of hospital accommodations, the insufficient educational opportunities, but above all the lack of loyalty on the part of his patients.

What is the remedy? I mention the proposed plan of providing a house for the doctor only to condemn it. The people who gave him the house would think they owned him and would make life miserable for him. There is only one harder taskmaster in the world than the man who pays his doctor and he is the man who never pays and who never intended to pay. The country districts have the remedy in their own hands. When they pay the doctor adequately and promptly, build good roads, provide sufficient hospital accommodations, make the high school what it should be, and above all be loyal to the home doctor; then, and then only, will the rural districts be able to secure competent medical men. Let them do these things and the old time country doctor will again appear and there will be no more complaint of a dearth of rural physicians.

Claysville, Pa. C. C. Cracraft, M.D.

BUBBLES

No business could long survive with a turnover of directors, staff and policy every four years. Why then do we ask the impossible of our government?

Can't somebody invent an x-ray that will show up the bones in a man's soul as well as those in his body? It would be a useful test to try on some of our ambitious politicians.

One thing the general practitioner can be thankful for is that his job is secure. He is getting so scarce that he will soon be able to demand union wages.

Heard in passing: "The doctor says I have this here blood pressure." This remark must be a first cousin to the doctors' favorite expressions, such as: "He had an acute abdomen and I operated him yesterday." It behooves us to be careful; English is dreadfully "catching."

THE MEDICAL SOCIETY

OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

ANNUAL REPORTS

This issue of the JOURNAL carries to each member of our Society a more or less detailed report of the year's official actions of your Secretary, Executive Secretary, Treasurer, and nine Trustees and Councilors, and the activities of ten standing or special committees. These officers have received, disbursed and invested approximately $75,000 of your money, edited and published your JOURNAL, and reviewed the year's work in your sixty-three component county societies. The committees have represented you before the state Legislature and before the citizens of Pennsylvania.

These published reports are to be approved or disapproved by the 1923 House of Delegates. In our democratic organization you are represented in the House of Delegates. Acquaint yourself with the contents of the year's reports and convey to your delegates your own suggestions for curtailment or extension of expenditures or service.

THE SECRETARIES' CONFERENCE

Our Eighteenth Annual Conference of County Society Secretaries will be held in Pittsburgh on Tuesday, October 2, 1923, at 5 p. m. The program, which is published elsewhere in this issue, contains three papers dealing with the creation and enforcement of good public health laws and two subjects devoted to the administration of medical society affairs. The secretaries are at home at these conferences and always look forward with pleasure to meeting State Society officers and all members of the State Society who have any interest in the economics of medical organizations.

Ninety minutes' time will be given for the reading and discussing of the five papers, after which dinner will be served. The Conference and dinner will provide nicely for your time between the close of the Tuesday afternoon scientific sessions and the smoker.

Opportunity will be presented at the registration desk for all who desire to make reservation for the dinner.

REDUCED RAILROAD FARES TO PITTSBURGH

Members traveling by rail to Pittsburgh should be sure when purchasing their going ticket to request a certificate, *not a receipt*. Immediately upon arrival at the Pittsburgh session the certificate should be presented for endorsement by the Secretary of the State Society at the Registration Desk. If two hundred and fifty certificates, the necessary minimum, are presented and duly validated, those holding same will be entitled to a return ticket, up to and including October 9th, at one-half the regular one way fare from the place of meeting to the point at which the certificate was issued.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to August 15th:

CUMBERLAND: *New Member*—Richard R. Spahr, Mechanicsburg.

DELAWARE: *Reinstated Member*—William B. Evans, 320 E. Ninth St., Chester.

ERIE: *New Member*—Henry L. Stem, Union City.

FAYETTE: *Reinstated Member*—R. C. Hough, High House.

FRANKLIN: *New Member*—Royal H. McCutcheon, White Pine Sanitarium, Mont Alto.

LANCASTER: *New Members*—Dexter W. Draper, 127 E. Orange St.; Norman E. Snyder, 226 E. King St., Lancaster.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since July 19th. Figures in first column indicate county society numbers; second column, State Society numbers:

July 19	Adams	24		7222	$5.00
	Venango	55		7223	5.00
21	Cumberland	35		7224	5.00
23	Venango	56		7225	5.00
25	Erie	135		7226	5.00
27	Lancaster	128	(½ year)	7227	2.50
28	Cumberland	36	(½ year)	7228	2.50
30	Franklin	53	(½ year)	7229	2.50
	Fayette	117		7230	5.00
Aug. 6	Fayette	118		7231	5.00
Aug. 11	Delaware	87		7232	5.00

APROPOS THE PITTSBURGH SESSION

THE PROGRAM

With the passing of the summer naturally our thoughts are directed to our work for the fall and winter and the preparation we should make to meet some of the perplexing cases that are sure to confront us during the coming months. For your consideration the Committee on Scientific Work has caused to be printed in the August number of the JOURNAL the full program for the Pittsburgh Session, October 1-4, of the Pennsylvania State Medical Society. Read it, and read it carefully, and see if you can afford to miss any of these papers. The Committee has tried to present a program that is the equivalent of a postgraduate course, and have even gone a step further, when the intensive study of some of the subjects is taken into consideration.

If any one, by the time he has read these lines, should say to himself, "I have just returned from my vacation; I can't afford to be away from my practice any longer." Or, "What is the use of my going to the meeting? I can read the papers in the JOURNAL." "The meetings are mostly dry and uninteresting; some long-winded fellow nearly puts you to sleep with his discussion." "The expense is too great," etc. Say, "Brother, Stop! Listen! Turn your car around; you are on the wrong road. Head your machine straight for Pittsburgh, October 1st, at the rate of 25 miles per hour. Drive up to the William Penn, park your car, and don't you dare leave town until you have heard the last word spoken on the subject of diabetes, Friday."

What do you know about the new treatment and management of these cases? The doctors who will speak do know and will try their best to enlighten you. Never in the history of the Society has there been such a galaxy of stars to present a subject from every angle.

So you are content to let your confreres be wide-awake, 100% physicians, while you remain at home and slump back into the "has been" class of 40% or less! Very well, when your friend across the street is called in consultation and is asked to direct the treatment of your diabetic case, then you will wish you had followed the other fellow when he headed his car for the Pittsburgh Session of the State Society.

OUR GUESTS AT PITTSBURGH

General Session

L. Wallace Ohl, D.D.S., is Assistant Professor of Exodontia and Anesthesia in the Dental College of the University of Pittsburgh. He is field agent for the dental clinics in Pennsylvania and neighboring states. He has written extensively on the subjects of dental focal infections, and anesthesia, and has done an unlimited amount of work dissecting the jaws on the cadaver in an effort to establish an anatomical basis for the technique of local anesthesia of the mouth.

John R. Caulk, M.D., is the Associate Professor of Genito-urinary Surgery, and Chief of the Genito-urinary Clinic of Washington University, St. Louis. He is also Editor of the *Interstate Medical Journal*, and Collaborating Editor of *Surgery, Gynecology and Obstetrics*, and the *American Journal of Syphilis*. Dr. Caulk has been a rich contributor of many important articles on genito-urinary surgery, and is recognized by the profession as one of the authorities in his branch of medicine. Among recent contributions, that dealing with ligation of the ureters, based upon a large amount of experimental work, is epoch-making. He is known for his ability to work hard and lucidly describe and explain his subject.

Medical Section

James P. O'Hare, M.D., of Boston, is probably better qualified to discuss the different phases of nephritis than any one now interested in that special work. His association with H. A. Christian, at the Peter Bent Brigham Hospital, combined with a natural ability to carry on original investigation, has placed him in the front rank, especially in "kidney work." His writings in *Oxford Medicine* and *The Medical Clinics of North America*, as well as his numerous contributions to medical periodicals, are familiar to all following this work. We feel that Dr. O'Hare's paper will be of unusual scientific interest to the section and a great addition to the general program.

GENERAL SESSIONS

Tuesday, 10 A. M.

Dr. Howard C. Frontz, Huntingdon, will deliver the President's Address which will be followed by a paper and lantern slides, "The Importance of Foci of Infection in the Mouth from a Dentist's Viewpoint," by L. Wallace Ohl, D.D.S. Dr. Ohl has had a wide experience in this line of work, and anyone who should be so unfortunate as to miss this paper will regret it. The concluding paper will be by Dr. Mary M. Wolfe, "The Laurelton State Village and Pennsylvania's Problem of Mental Deficiency," a subject too long neglected by this Society.

Wednesday, 9 A. M.

"Occular Manifestations from a Traumatic Encysted Hemorrhage in the Brain"; "Diagnosis and Treatment of Tonsillar Infection"; "The Relation of Cardio-vascular Disease to Symptoms in the Abdomen"; and "House Dust in Asthma," are the four papers that will be presented before we come to the "Symposium on Anuria," which has been timed as nearly as possible at 10:30 A. M. in order to allow the members

of the House of Delegates to attend. "Postoperative Anuria" will be discussed by Dr. Floyd Keene; "Calculous Anuria," by Dr. John R. Caulk, of St. Louis, (by invitation); and Dr. Edwin Sweet will take up the "Theoretical Discussion of Anuria" in a fifteen minute paper. The Program Committee is anxious that members who have had cases of anuria should briefly report them in the general discussion.

Thursday, 2 P. M.

Two State Papers—"Quarantine Laws" (5 minutes) and "Prevention of Diphtheria" (10 minutes) are the headliners for the Thursday afternoon session, when "High Voltage X-Ray in Cancer," which we hear so much about these days, will be considered. Lantern slides will help greatly in following the papers, "Surgical Reconstruction of the Nose," and "Poisoning of Children by Caustic Alkalies Sold in Grocery Stores." Dr. Chevalier Jackson was instrumental in having a bill put through the last Legislature for the protection of the public against caustic alkalies and will give his reasons for the same when presenting his paper. The concluding papers, "The Practical Use of Insulin in the Treatment of Diabetes," and "The Trend in Modern Obstetrics," will bring the scientific program to a close.

Have you forgotten that the general sessions were intended for all the sections? By what method of reasoning did you come to the conclusion that it was not necessary for you to remain and attend the same? Don't crank the car until Friday afternoon. You may annoy some one.

OUR GUESTS AT PITTSBURGH

Surgical Section

E. S. Judd, M.D., Rochester, Minnesota: Of the younger American surgeons none are more eminent than Dr. Judd. A native of Rochester, he returned to his home town following his graduation in medicine and at once came under the influence of the Mayos. For several years he was an assistant to Drs. W. J. and C. H. Mayo during the early development of the Mayo Clinic. There he was given an opportunity for a fundamental training in surgery such as has been the privilege of but few of our profession. With the marvelous growth of the Clinic, Dr. Judd soon became one of the chief surgeons and now for a good many years his operating room has been a Mecca for visiting surgeons from not only the United States but from foreign countries as well. A lucid and convincing speaker, an operator of great versatility and marvelous dexterity, attendance upon his clinics is always looked upon as a priceless privilege by those whose fortune it has been to visit Rochester. No field of surgery has been left untouched by him. For many years he has taken a special interest in surgery of the genito-urinary system and probably no surgeon in America has had greater experience with this branch of surgery. The Society is very fortunate in having Dr. Judd with us to present a paper in the Symposium on Surgery of the Kidney and Ureters.

Thomas S. Cullen, M.D., for thirty years has had charge of the gynecological pathological work in the Johns Hopkins Hospital, Baltimore. He has published over two volumes of short articles and the following books: Cancer of the Uterus, Adenomyoma of the Uterus, Myomata of the Uterus (with Howard A. Kelly), Diseases of the Umbilicus. For ten years Cullen did nearly all the general surgery at the Cambridge Hospital, a very inaccessible point on the Eastern Shore of Maryland. For years he has been Chairman of the Medical Board of the Church Home and Infirmary—the hospital in which Edgar Allen Poe died. He was one of the pioneers in starting the cancer campaign for the education of the laity as to the value of early diagnosis. Cullen has for years claimed that every surgeon opening an abdomen must be thoroughly equipped to deal with any and every lesion he may meet with in the abdomen. His work is in large measure limited to gynecology and abdominal surgery.

SECTION ON MEDICINE

Tuesday, 2 P. M.

Following the Chairman's Address there will be two papers, "Points of Contact Between Internal Medicine" and "Psychiatry and the Rôle of Nutrition in the Etiology, Course and Prevention of Mental Disorders," that should prove of timely interest to all internists. Then Dr. James P. O'Hare, of Boston, will read a paper by invitation on "Hemorrhagic Nephritis." No one can afford to miss this paper who is interested in the title. "Facts that Govern the Proper Diet in Nephritis" is a most important subject. After these last two papers Dr. Kolmer will give his "Recent Investigations Concerning Specificity and Practical Value of the New Complement Fixation Reaction in Syphilis." Last but not least on the program for the afternoon will be the paper of Dr. Permar of Pittsburgh, "The Interpretation of Lobar Pneumonia in the Light of Experimental Study."

Wednesday, 2 P. M.

The first paper should correct many of your ideas as to what you have been prone to call "Nervous Indigestion." Come hear it. Dr. Rehfuss will follow with a paper on "The Ambulatory Treatment of Gastric Ulcer," then the "Management of Cancer of the Stomach," by Dr. Sailer should give us all food for thought in the management of these stomach conditions. Two papers, one on the heart and blood-pressure—"Heart-Disease and Pregnancy," and "The Evaluation and Treatment of Abnormal Blood-Pressure" by Drs. Heard and Riesman will prove of great interest. "The Pathology of Diseases of the Pancreas," and "Consideration of Polycythemia, With a Report of Cases," brings the meeting to a close.

Thursday, 9 A. M.

"Management of Convalescence"; "The Importance of an Exact Diagnosis in Acute Articular Rheumatism"; "Diagnosis and Treatment of Pernicious Anemia and Severe Secondary Anemias"; "Blood Transfusion, Its Indications and Technique"; "Basal Metabolism: The Value of its Estimation"; "Treatment of Encephalitis"; and "Migraine, with Especial Reference to Paralytic Manifestations," are all papers of great interest and offer food for thought.

Some men go to State Meetings to attend the General and Section Meetings. Some men attend the Section Meetings, and never go near the General Meetings. Some men go to the State Meetings to play golf and never attend the General or Section Meetings. To which Class do Y-O-U belong?

SECTION ON SURGERY

Tuesday, 2 P.M.

The Chairman's Address will be followed by a paper, "Contraindications to Cholecystectomy." We predict a lively discussion when the question of drainage or removal of the gall-bladder comes to general discussion. "Recurrent Cholelithiasis" and "Treatment of General Peritonitis Following Ruptured Appendix" are the next papers for discussion. "Chronic Duodenal Obstruction" with lantern demonstration, will prove of interest as it is a new subject. "The Practice of Surgery under the Pennsylvania Compensation Laws," the last paper of the afternoon, is well placed on the program, as it will need lots of time for discussion.

Wednesday, 2 P.M.

Gynecology and Obstetrics are the subjects for this session, lined up under the head of a "Symposium On Pelvic Surgery." "Practical Points in Pelvic Surgery," by Dr. Cullen of Baltimore, "Preservation of the Ovaries in Pelvic Surgery," "A Review of the Present Status of Minor Surgical Procedures in Gynecology," "Surgical Treatment of Complete Uterine Prolapse," "The Present Status of Treatment of Carcinoma of the Uterus," and "Focal Infection as a Danger to the Pregnant Woman." A symposium always draws a crowd. Move up front and make room for the late comer.

Thursday, 9 A.M.

Symposium on Surgery of the Kidney and Ureter: Dr. Judd, of Rochester, Minn., will not need a formal introduction to the surgical section, as he is well known to all the members. His paper, "Surgery of the Kidney and Ureter," will be listened to with intense interest. "Modern Diagnostic Methods in Renal and Ureteral Surgery," "Treatment of Small Ureteral Calculus," with lantern slides, and "Treatment of Accidental Occlusion of the Ureter" complete the symposium. "Review of Five Years of Fracture Work with Special Reference to Open Reduction," with a lantern demonstration, brings the surgical section meeting for this year to a close.

Don't try to play golf while the scientific meetings are in progress. It is a psychological game. Your conscience will say when you are on the golf links, "I should be attending the General and Section meetings." Result: You dub the ball and miss your putt. The other fellow wins the hole. Moral; Stick to your knitting in the front row where you belong.

OUR GUESTS AT PITTSBURGH

Pediatric Section

Alfred F. Hess, M.D., New York City, is Professor of Clinical Pediatrics at the University and Bellevue Medical College (University of New York). Dr. Hess has been a notable author on pediatric subjects for many years. More recently he has made an intensive study of rickets and is now regarded as one of the greatest authorities on this disease.

Royal S. Haynes, M.D., New York City, is Professor of Clinical Diseases of Children at the College of Physicians and Surgeons (Medical Department of Columbia University). Dr. Haynes was for some years the editor of the *Archives of Pediatrics* and has contributed largely to Pediatric Literature. He is the attending pediatric physician to the Sloane Hospital for Women and the Children's Wards of the Bellevue Hospital. He is also consulting physician to the Willard Parker Hospital.

Section on Eye, Ear, Nose, and Throat Diseases

Edward Jackson, M.D., Denver, Colorado, is no stranger to Pennsylvania, as he was born in West Goshen, Chester County, Pa., and practiced in this state until 1898, when he removed to Denver. He is Editor of the *Ophthalmic Review,* the *American Journal of Ophthalmology* and a frequent contributor to medical literature on his specialty.

W. B. Chamberlin, M.D., Cleveland, Ohio, is Assistant Clinical Professor of Otolaryngology of the Western Reserve University School of Medicine, and Otolaryngologist to the Lakeside Hospital, Cleveland. He has just served as Chairman of the Ear, Nose and Throat Section of the American Medical Association, after having acted most efficiently as Secretary for five years. He is a Fellow of the American Laryngological, Rhinological and Otological Society and has been Vice-President of the Middle Western Section. He is a Fellow of the American Bronchoscopic Society, served as Vice-President of the American Laryngological Society in 1921, and has contributed extensively to the literature of the specialty.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, 2 P.M.

The first paper of this session is the Address by Dr. Sears, who has for several years acted most efficiently as secretary for the section, and now this year as Chairman. The standard he has set is well reflected in the programs of past years and this one. Without his aid our labors would have been burdensome. This is an afternoon of papers devoted to the eye, concerning "Vernal Conjunctivitis, Duration, Clinical Features, Prognosis, and Treatment"; "Personal Experience in the Management of Heterophoria"; "The Surgical Treatment of Squint, with Special Reference to the Choice of Operation Best Suited to an Individual Case"; "The Rôle of Impacted and Unerupted Teeth in Ocular Disorders"; "Remarks upon the Removal of the Cataractous Lens with Presentation of an Instrument for Preventing Vitreous Loss"; and "Recurrent Hemorrhage Into the Vitreous."

Wednesday, 2 P.M.

"The Ophthalmoscope In General Medical Diagnosis" (by invitation), by Dr. Edward Jackson, of Denver, should prove of great interest to the section members and the medical men. Following this paper comes the Symposium on Sinus Thrombosis—three papers by Drs. deSchweinitz, MacCuen Smith, and E. W. Day, on "Etiology and Diagnosis of Lateral Sinus Thrombosis"; "Etiology and Diagnosis of Cavernous Sinus Thrombosis"; and "Treatment of Cavernous and Lateral Sinus Thrombosis."

Thursday, 9 A.M.

The first paper with lantern demonstration is "Bron-

choscopic Treatment of Pulmonary Suppurations and Bronchial Asthma." Then the following: by invitation, Dr. W. B. Chamberlain, of Cleveland, will read a paper on "The Gradenigo Symptom Complex," a subject the members will all be most anxious to hear. "Foreign Bodies in the Respiratory Tract and Esophagus," with lantern demonstration; "The Present Status of Vestibular Tests from the Standpoint of the Otologist"; "Diagnosis and Treatment of Chronic Maxillary Sinusitis"; and "Diagnosis and Treatment of Vincent's Angina," will bring this section to a close for the year 1923.

Some men attend the State Meetings and never go near the Exhibitors. They are the "Joneses that help pay the freight." Without the exhibitors' aid the Trustees would have to add five dollars to the yearly dues of each member of the State Society to defray the expenses of the annual meeting. Oh, what a howl would go up if this should come to pass! All the Exhibitors want is for you to visit and talk with them and register, and look their exhibit over. What shall the answer be? Down in your jeans for five or walk in and visit them! A watchful eye will note your step. A word to the wise should be sufficient.

SECTION ON PEDIATRICS

Tuesday, 2 P. M.

"The Future of Pediatrics" by the Chairman, Dr. Gittings, will be the opening paper for this section. "Practical Heliotherapy"; "X-Ray Studies of the Chest in Infants and Children" (with lantern demonstration); "Anemias in Children"; "The Interrelationship Between the Health and Social Welfare of Children"; and "Jaundice of the Newborn" are subjects down for the initial meeting.

Wednesday, 2 P. M.

Two neurologic subjects will attract the attention of the members—"Essentials of a Neurologic Examination in Children" and "Essentials of a Psychiatric Examination in Children"; also "The Physician's Opportunity in the Prevention of Diseases of Childhood." By invitation Dr. Alfred F. Hess, New York City, will give a twenty minutes' demonstration with the lantern —"The Rôle of Ultraviolet Rays in Rickets." The two closing papers are: "Intradermal Vaccination" and "Cystinuria; Report of a Case."

Thursday, 9 A. M.

The closing session will consider the following subjects: "Acute Otitis Media and Mastoid Involvement," and "The Common Diseases of the Skin in Childhood." There are two papers on syphilis—"Clinical Aspects of Congenital Syphilis" (by invitation), Dr. Royal S. Haynes, New York City; and "Mechanism of Infection, Immunity, and Diagnostic Reactions in Congenital Syphilis," by Dr. John A. Kolmer, Philadelphia. "Mongolian Idiocy," and "Tonsillectomies from the Standpoint of the Pediatrician" conclude the section meetings.

When in Pittsburgh attending the State Society Meeting please avoid the seventh floor of the hotel, and room No. 7-11.

In conclusion it may be stated that never in the history of the Society has there been such a galaxy of medical stars assembled for a public meeting as we are to have on Thursday evening, and a rare treat is in store for those interested in the Insulin treatment of diabetes at the clinic. Thursday evening, Drs. F. C. Banting, Toronto, Canada, John R. Williams, Rochester, N. Y., and C. H. Newburg, Ann Arbor, Mich., will be the speakers; and Friday morning, October 5th, the Clinic program will be as follows:

1. Laboratory Aspects of Diabetes (30 min.), Dr. Banting.

2. Insulin in the Treatment of Diabetes (20 min.), Dr. Ordway, Albany, N. Y.



CHAMBER OF COMMERCE BUILDING

3. Insulin; Its Administration and Its Possible Dangers, Dr. Williams, Rochester, N. Y. (20 min.).

4. Diabetic Coma (20 min.), Dr. Allen R. Jones, Buffalo, N. Y.

5. Diet and Diabetes (20 min.), Dr. Newburgh, Ann Arbor, Mich.

6. Surgery and Diabetes (20 min.), Dr. John A. Lichty, Pittsburgh.

The Society is to be congratulated that the local Committee on Arrangements, under the direction of Dr. Harold Miller, Chairman, has provided such a treat for the public meeting Thursday evening and the Clinic on Friday morning, and our hats should be off to these men who have consented to come from afar, and give their time for our benefit.

In what way can I show my appreciation? Attend both meetings.

T. G. SIMONTON, *Chairman,*
Committee on Scientific Work.

COMMITTEE ON SCIENTIFIC EXHIBITS

Dr. S. R. Haythorn, Chairman, 5431 Baywood St., Pittsburgh.

Dr. V. L. Andrews, Pathologist, West Penn Hospital.

Dr. A. J. Bruecken, Pathologist, St. Francis Hospital.

Dr. G. W. Grier, Rœntgenologist, Magee Hospital.

Dr. E. W. Goodpasture, Pathologist, Singer Memorial Research Laboratory (by invitation).

Dr. D. Hooker, Department of Anatomy, University of Pittsburgh.

Dr. J. F. McCullough, Rœntgenologist, St. Francis Hospital.

Dr. F. C. Narr, Pathologist, Passavant Hospital.



Fourth Avenue
"The Wall Street of Pittsburgh"

Dr. W. B. Ray, Rœntgenologist, Allegheny General Hospital.
Dr. DeW. G. Richey, Pathologist, Mercy Hospital.
Dr. R. V. Robinson, Rœntgenologist, Mercy Hospital.

RULES GOVERNING SCIENTIFIC EXHIBITS

1. The purpose of the exhibit shall be one of education and not of competition and advertisement.

2. The specimens shall be placed in the exhibit according to organ or tissue and not with reference to hospital or individuals.

3. It was decided that the following groups of exhibits be arranged, each one with reference to: (a) anatomical specimens, (b) pathological specimens, (c) x-ray plates and photographs, (d) gross and microscopic pictures.

The following groups of organs and tissues will be included:

(1) Head: Brain, brain tumors, sinusitis, etc.
(2) Chest: Heart, arteries, lung pathology.
(3) G. I. Tract: Stomach, intestines, pancreas, liver.
(4) G. U. Tract: Kidney, bladder.
(5) Bone Defects: Osteomyelitis, bone syphilis, bone tumors.

4. All persons intending to exhibit specimens shall reply in letter stating the approximate number of specimens of each variety they intend to submit and this letter shall be in the hands of the Committee by September 15th.

5. All specimens must be in the hands of the Committee by noon on Monday, October 1st.

6. All pathological specimens must be preserved and mounted in suitable, permanent form.

7. The Committee reserves the right to exclude from the exhibit any specimen which is considered unsuitable, either because of too much reduplication, too great prominence of name of exhibitor, or incompatibility with the rest of the exhibit.

HOTEL RESERVATIONS

The William Penn Hotel (Headquarters) reports that the registration of members attending the State Society Session is larger at this date than on any previous occasion. The Management requests the Hotel Committee to impress upon the members of the Medical Society of the State of Pennsylvania who have not already made reservations, to do so at once.

Instructions for making hotel reservations appeared on page 615 of the Atlantic Medical Journal for June, together with names of the Hotel Committee of the Allegheny County Medical Society, a list of hotel rates and an application blank for hotel accommodations, which will be found on page 616 of the same Journal.

PLACES OF INTEREST IN PITTSBURGH

The Block House, Lower Penn Avenue, near Point Bridge, is the oldest building in Pittsburgh, built in 1759, and the only historic relic of Pittsburgh's Colonial days.

Carnegie Institute, Schenley Park and Forbes St., is the largest and finest institute of art and museum of natural history in the United States.

1—Schenley Park Swimming Pool

2—Schenley Farms District

3—Masonic Temple



5—Capt. Alfred E. Hunt Artillery Armory

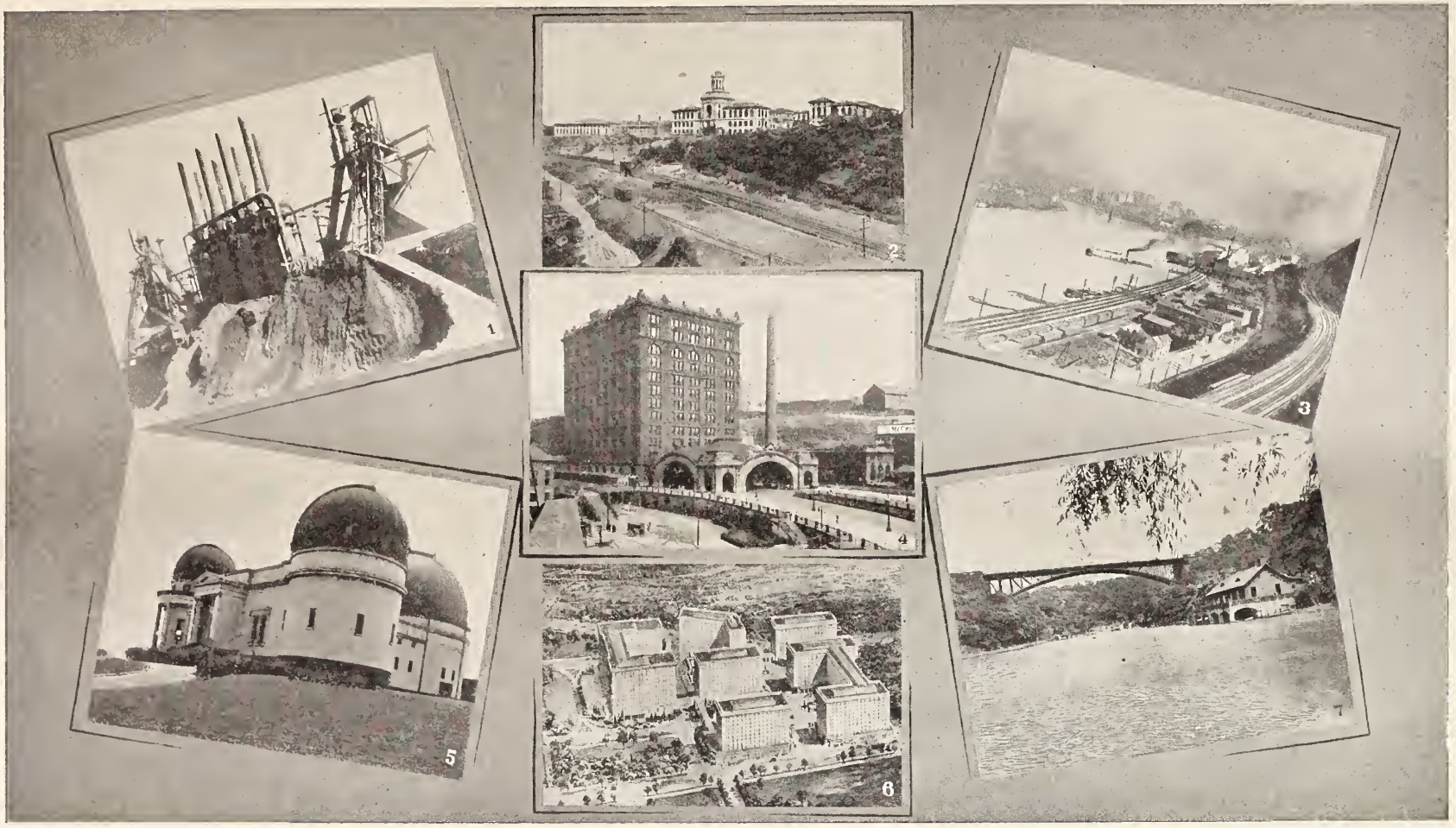
4—Soldiers and Sailors Memorial
6—Syria Mosque

7—Pittsburgh Athletic Association

1—CARNEGIE STEEL CO., DUQUESNE BLAST FURNACE

2—CARNEGIE "TECH"

3—"THE POINT"
Confluence Allegheny and Monongahela Rivers to form the Ohio

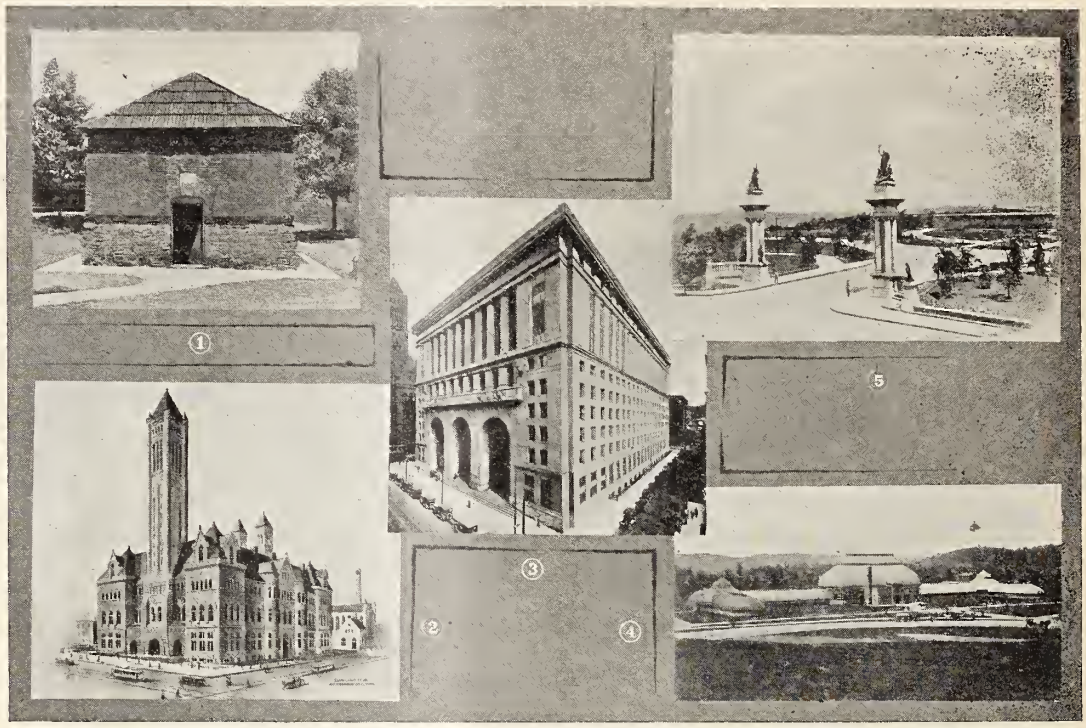


5—ALLEGHENY OBSERVATORY

4—UNION STATION (P. R. R.)
6—SCHENLEY APARTMENTS

7—PANTHER HOLLOW LAKE (SCHENLEY PARK)

1—COL. BOUQUET'S BLOCKHOUSE 3—CITY-COUNTY BUILDING 5—ENTRANCE HIGHLAND PARK



2—ALLEGHENY COUNTY COURT HOUSE 4—PHIPPS CONSERVATORY, SCHENLEY PARK

Memorial Hall, 5th Ave. and Bigelow Boulevard, erected in memory of Soldiers, Sailors and Marines of Allegheny County who served in the Civil War.

Phipp's Conservatory, Schenley Park, contains a splendid display of flowers and plant life.

University of Pittsburgh, north of 5th Ave., opp. Schenley Park, consists of 13 schools, including schools of Chemistry, Medicine, Dentistry and Pharmacy. It has an enrollment of over 4,000.

Highland Park Zoölogical Gardens, Highland Park, contains a varied and extensive collection of animal and bird life.

Allegheny Observatory, Riverview Park, founded in 1859, is one of the foremost in importance of work done and astronomical discoveries accredited.

Carnegie Institute of Technology, Schenley Park, is one of the finest institutes of technology in the United States.

Stephen C. Foster Memorial Home, 3600 Penn Ave., is the birthplace of Stephen C. Foster, composer of "My Old Kentucky Home," and many other familiar songs.

The Pennsylvania College for Women, 5th Ave. and Woodlawn Road, was founded in 1869 to meet the need of an institution of higher learning for women maintained under distinctly Christian influence, although it is now undenominational.

SOME RARE OPPORTUNITIES

Arrangements for Thursday evening activities during the State Convention are practically complete.

Preceding the Symposium on Diabetes, open to the public, at which Drs. Banting, Williams and Newburgh will speak, there will be a subscription dinner at the new University Club.

Tickets for the dinner will be offered to the profession of Western Pennsylvania by mail and will be available at the Registration Desk or Information Bureau for visiting members and guests from other sections of the State.

Every member of the Society having diabetic patients is urged to inform them of the opportunity to see and hear, without charge, Dr. Banting, Thursday evening, October 4, 1923, at Carnegie Music Hall, Pittsburgh. Upon request and the promise to use them, reserved seat tickets will be sent for physicians and their patients. Reserved seats, however, must be occupied by 8 P. M. After this time all seats will be thrown open.

It will be well worth delaying the customary Thursday afternoon exodus from the State Convention. The dinner in the beautiful and spacious new University Club promises to be a delightful gathering and it is certain that the Symposium on Diabetes will be excellent.

On Friday morning, October 5, 1923, one of the attractions will be the clinic on Diabetes, the program following:

I. Laboratory Aspects of Diabetes .....
DR. F. G. BANTING, Toronto, Canada.
(30 minutes)

II. Insulin in the Treatment of Diabetes.....
DR. THOMAS ORDWAY, Albany, N. Y.
(20 minutes)

III. Insulin: Its Administration and Its Possible Dangers .....DR. JOHN R. WILLIAMS,
(20 minutes) Rochester, N. Y.

IV. Diabetic Coma .....DR. ALLEN A. JONES,
(20 minutes) Buffalo, N. Y.

V. Diet and Diabetes .....DR. L. H. NEWBURGH,
(20 minutes) Ann Arbor, Mich.

VI. Surgery and Diabetes ....DR. JOHN A. LICHTY,
(20 minutes) Pittsburgh, Pa.

The amphitheatre at Mercy Hospital has space for approximately two hundred and every inch of space should be occupied during this exceptional clinic on diabetes.

MARK THIS PART OF YOUR PROGRAM IN RED:

Thursday, October 4, 1923, 6 P. M., Dinner for Dr. Banting at University Club; 8 P. M., Symposium on

Diabetes, Carnegie Music Hall (two minutes walk from University Club); Friday, October 5, 1923, 9 A. M., Clinic on Diabetes, Mercy Hospital Amphitheatre.

Remember that the State Convention this year is not "over" on Thursday afternoon—make your plans accordingly.

The literature on diabetes and insulin is voluminous; it would require several weeks' reading to cover it—save time and get a wider knowledge on this live subject by attending the Symposium and Clinic.

THE WESTERN PENNSYLVANIA HOSPITAL

CELEBRATION OF THE SEVENTY-FIFTH ANNIVERSARY OF ITS FOUNDATION, FRIDAY, OCTOBER 5, 1923

Program

Clinics ..... 8:30 A.M. to 12 M.
*Luncheon ..... 12:00 P.M. to 1 P.M.
Address by Dr. John B. Deaver .....
..... 1:00 P.M. to 2:00 P.M.
Dry Clinic on the "Thyroid" 2:00 P.M. to 4:00 P.M.
*Afternoon Tea served.

HISTORICAL REVIEW

The Western Pennsylvania Hospital was created by an act of the Pennsylvania Legislature, March 18, 1848.

The first official meeting of the Contributors took place April 18, 1848, when the following officers were elected: President, Thos. Bakewell; vice-presidents, George Breed and John Graham; secretary and treasurer, John Harper.

Capt. and Mrs. Schenley and Mr. and Mrs. Harmar Denny having donated a large tract of ground at 28th St. fronting the Pennsylvania Railroad, The Western Pennsylvania Hospital was erected thereon for the care of one hundred medical and surgical and twenty insane patients. The needs of the insane of this district were so great, however, that it soon became necessary to erect a separate hospital for their care at Dixmont (1862). Both institutions remained under the same management until 1907 when separate charters were granted by the Legislature, our institution retaining the name of The Western Pennsylvania Hospital and the Insane Department taking that of Dixmont, by which it had been generally known.

The Western Pennsylvania Hospital was opened for the admission of patients, January, 1853, with the following Staff:

Consultants: Dr. Addison, Dr. Gazzam, Dr. Edrington, Dr. Wm. F. Irwin; *Physicians:* Dr. James King, Dr. Jos. A. Reed, Dr. Geo. D. Bruce, Dr. John Wilson; *Surgeons:* Dr. J. H. Willson, Dr. R. B. Mowry, Dr. M. R. Trevor, Dr. L. Schenck.

The needs of the Government were so pressing during the Civil War that in 1862, after the opening of the Insane Department at Dixmont, the Medical and Surgical Department of The Western Pennsylvania Hospital, as it was then known, was placed at the disposal of the Government for the care of soldiers and not returned to the hospital management until October 3, 1865. It is really from this latter date that the important activities of the hospital began.

From 1865 to 1870 Dr. C. B. King acted as curator and physician. During 1870 he resigned as curator, remaining, however, in charge of the Medical Department, to which were added Drs. LeMoyne, McCann and Benham.

In 1873 the Staff was as follows:

Surgeons: Dr. C. B. King, Dr. F. LeMoyne, Dr. Jas. McCann, Dr. J. B. Murdoch; *Physicians:* Dr. W. H. Daly, Dr. W. Snively, Dr. T. C. Rhodes, Dr. W. J. Asdale.

An interne service was not established until 1874. The first Interne was W. B. Mowry, of Allegheny City (N. S. Pittsburgh) who together with two medical students constituted the interne staff.

The Western Pennsylvania Staff: Drs. James McCann, James B. Murdoch, Cyrus B. King, surgeons; and Drs. Wm. J. Asdale, J. Chris Lange, and W. Snively, physicians, recognizing the fact that the amount of hospital clinical material furnished ample facilities for student and teaching requirements, conceived the idea of founding a medical school in connection with the Western Pennsylvania Hospital. In 1886 the Western Pennsylvania Medical College was organized. The Medical School building was erected on Brereton Avenue, on a site adjoining the grounds of the Western Pennsylvania and an operating pavilion was added to the hospital in which the medical and surgical clinics of the college were held.

On September 1, 1892, a Nurses' Training School was established. Miss Mary McMillan of New York was the first superintendent of the school.

November 3, 1909, the cornerstone of the present hospital building on Friendship Avenue was laid, and on May 12, 1912, all patients were transferred from the old hospital to the new building.

The present Western Pennsylvania Hospital consists of the hospital proper, the power building, and the nurses' dormitory. It's capacity is 475 beds. Its present medical staffs comprise: A consulting staff of 6 members, a medical staff of 6 chiefs and 8 assistants, a surgical staff of 12 chiefs and 15 assistants, a dispensary staff of 25 members, and an interne staff of 23 members.

The new nurses' dormitory with its 226 individual bed rooms has just been completed and dedicatory exercises are planned as a part of the hospital's anniversary. The present Training School is composed of sixteen officers and head nurses and of 158 pupil nurses.

NOTICES

There will be a subscription dinner on Thursday, October 4th, at 6:00 P. M., in honor of Dr. Banting of Toronto. This dinner will be given at the new University Club. Tables or seats may be reserved in advance by sending request with check ($5.00 per plate) to Dr. C. B. Maits, 6692 Kinsman Road, Pittsburgh, Pa.

On Thursday, October 4th, at 8:00 P. M., in the Carnegie Music Hall, Dr. Banting will deliver a lecture on diabetes, with special reference to the development of insulin. This lecture will be not only for our own members but for the public, so that all those interested in diabetes will be welcome. The accoustics of the Music Hall are so perfect that any seat is a good seat. Reserved seat tickets, however, will be furnished for the asking at the registration booth during the session.

Any of our members who desire to play golf will be furnished with guest cards, on request, for any of the Pittsburgh country clubs.

AUTOMOBILE ROUTES TO PITTSBURGH

Route No. 1

PHILADELPHIA TO PITTSBURGH
THE LINCOLN HIGHWAY

.0 PHILADELPHIA
33.0 Downingtown

* Under Management of the Ladies of the Social Service Committee.

39.0		Coatesville
65.5		Lancaster
76.5		Columbia
89.5		York
117.5		Gettysburg
143.3		Chambersburg
165.0		McConnellsburg
199.0		Bedford
235.5		Jennertown
247.0		Ligonier
266.0		Greensburg
275.5		Irwin
283.0		East McKeesport
285.5		East Pittsburgh

Turn right and follow Ardmore Boulevard (Speed Trap) bearing left on Penn Ave. through

290.0		Wilkinsburg
291.5		Point Breeze

For Hotel Schenley turn left on Fifth Ave.; for downtown hotels continue direct on Penn Ave. through

292.5		East Liberty
292.6		Turn left on Beatty St. and bear right on Baum Blvd. (Automobile Club of Pittsburgh on left)
294.2		At end turn right on Craig St. to Bigelow Blvd.
297.3		PITTSBURGH.

All improved and in fair condition.

August—Detour of about 7 mi. east of Gettysburg; Detour bridge out Harrisonville, west of McConnellsburg; Detour 1½ mi. Youngstown (10 mi. east of Greensburg).

Route No. II

WILLIAMSPORT TO PITTSBURGH

.0		WILLIAMSPORT
15.5		Jersey Shore
28.0		Lock Haven
66.5		Bellefonte
79.5		State College
105.5		Water Street
128.0		Hollidaysburg
140.5		Cresson
151.5		Ebensburg
158.5	Turn left	Mundys Corners
169.5		Johnstown
188.0	Turn right	on Lincoln Highway, Jennertown
199.5		Ligonier

From here, follow Route No. 1, to Pittsburgh, 250.0 miles.

All improved and in good condition.

August Detours—Rough, entering Johnstown; 1½ mi. at Youngstown (10 mi. east of Greensburg).

Route No. III

EASTON TO PITTSBURGH

.0		EASTON
16.0		Allentown
51.0		Reading
78.0		Lebanon
102.5		Harrisburg
123.2		Carlisle
152.8		Chambersburg
	Turn left	at Square on Lincoln Highway
174.5		McConnellsburg
208.5		Bedford
245.0		Jennertown
256.5		Ligonier

From here, follow Route No. I, to Pittsburgh, 306.3 miles

All improved and in good condition.

August Detours—2 between Reading and Harrisburg; Harrisonville, bridge west of McConnellsburg; Youngstown, 1½ mi. (10 mi. east of Greensburg).

Route No. IV.

SCRANTON TO PITTSBURGH

.0		SCRANTON
18.0		Wilkes Barre
58.5		Bloomsburg
68.0		Danville
79.2		Northumberland
86.5	Turn right	Selinsgrove
97.5		Middleburg
130.5		Lewistown
136.7		Reedsville
162.2	Turn right	(Speed Trap) Mill Creek
168.2		Huntingdon
178.2		Water Street
200.8		Hollidaysburg
213.0		Cresson
224.0		Ebensburg
231.0	Turn left	Mundys Corners
242.2		Johnstown
260.7		Jennertown
272.2		Ligonier

From here, follow Route No. I, to Pittsburgh, 322.3 miles.

About 50 mi. of clay between Wilkes Barre and Lewistown, usually very good condition. Balance improved.

August—Rough entering Johnstown.

Alternate Route between Selinsgrove and Lewistown, continue down river (detour of about 13 mi. between Selinsgrove and McKees Half Falls via Mt. Pleasant Mills) to Liverpool, thence via Millerstown to Lewistown. 20 miles longer than above route.

Route No. V

ERIE TO PITTSBURGH

.0		ERIE
15.3		Waterford
26.0		Cambridge Springs
40.3		Meadville
51.3		Cochranton
67.3		Franklin
88.8		Harrisville
95.0		Slippery Rock
112.0		Butler
128.7		Bakerstown
141.0		Etna

Bear left on Bridge St. then left on Main St. through

143.3		Sharpsburg.

Turn right, cross bridge over Allegheny River, turn left, cross bridge and turn right into Highland Park. Turn right and at top of grade sharp right to Park entrance, N. Highland Avenue to Penn Avenue.

146.0		East Liberty

(For Hotel Schenley continue direct on S. Highland Ave. to end, and turn right on Fifth Avenue.)

146.1		Turn right on Baum Boulevard, pass Automobile Club of Pittsburgh on left
147.7		At end turn right on Craig St. to Bigelow Boulevard
150.8		PITTSBURGH

All improved; condition good.

Detour—1,200 ft. between Cambridge Springs and Meadville; 800 ft. at Wyattsville between Cochranton and Franklin.

PROGRAM

EIGHTEENTH ANNUAL CONFERENCE OF SECRETARIES

TUESDAY, OCTOBER 2, AT 5 P. M
AT THE HOTEL HENRY

Chairman—JOHN E. LIVINGOOD, Secretary, Berks County Medical Society.

THE KEEPING OF THE COUNTY ROSTER OF PHYSICIANS, MEMBERS AND NONMEMBERS BY THE SECRETARY OF THE COUNTY MEDICAL SOCIETY

WILLIAM H. MAYER, Secretary, Allegheny County Medical Society.

Discussion opened by Walter S. Brenholtz, Secretary, Lycoming County Medical Society.

INFLUENCING MEDICAL LEGISLATION BY CONFERENCE, BY COMPONENT SOCIETIES OR BY INDIVIDUAL MEMBERS

IRA G. SHOEMAKER, Trustee and Councilor, Third District.

Discussion opened by President Lawrence Litchfield.

IS THE PROSECUTION OF ILLEGAL PRACTITIONERS BY THE COUNTY MEDICAL SOCIETY WORTH WHILE?

ANTHONY F. MYERS, Secretary, Bucks County Medical Society.

Discussion opened by M. Edith MacBride, Secretary, Mercer County Medical Society.

SHOULD THE MEDICAL LEGISLATIVE CONFERENCE BE SUPPORTED BY VOLUNTARY CONTRIBUTIONS OR BY AN ANNUAL ASSESSMENT OF $2.00 PER MEMBER?

JOHN E. LIVINGOOD, Secretary, Berks County Medical Society.

Discussion opened by President-Elect Howard C. Frontz.

AFFILIATE MEMBERSHIP IN COUNTY, STATE AND NATIONAL MEDICAL SOCIETIES

Secretary WALTER F. DONALDSON.

Dinner at 6:45 P. M. Component Society Secretaries, officers of the State Society and members of the Board of Trustees, $1.00 per plate. Other members of the State Society will be welcome at $2.50 per plate.

PENNSYLVANIA NEWS ITEMS

DEATHS

DR. ISAAC FRANCIS STOVER, of Philadelphia, aged 63 years, died on July 12th following a long illness. Dr. Stover was graduated from Jefferson Medical College of Philadelphia in 1893.

DR. GEORGE ALFRED BARRALL, of Allentown, who was born in 1857 and was graduated from Jefferson Medical College of Philadelphia in 1882, died on August 18th following an illness of about six months.

DR. BENJAMIN ALOYSIUS DEL MARCO, of Philadelphia, aged 28 years, was shot and killed on July 13th by a demented patient. Dr. Del Marco was a graduate of Jefferson Medical College of Philadelphia, class of 1921.

DR. GEORGE A. KERLING, of Pennsburg, dropped dead on the afternoon of August 17th while watching electricians wire his country home. Death was due to apoplexy. Dr. Kerling was born in 1863, and was graduated from Jefferson Medical College of Philadelphia in 1887.

DR. WILLIAM CONRAD KESSLER, of Philadelphia, who was graduated from Jefferson Medical College of Philadelphia in 1913, died of appendicitis on July 13th, at the age of 35 years. Dr. Kessler was a member of the American Urological Association and served in the medical corps of the U. S. Army during the World War.

MRS. MARGARET ELLENBERGER died August 24th, at the home of Dr. C. R. Phillips, Harrisburg, aged 83 years. She is survived by two sons, Dr. J. Wesley Ellenberger, and C. A. Ellenberger, and one daughter, Mrs. C. R. Phillips, all of Harrisburg, and a number of grandchildren and great grandchildren. Mrs. Ellenberger was prominent in the work of the Methodist Church and in the work of the Women's Christian Temperance Union in Harrisburg, and throughout her life took an active interest in the charitable work of the city.

ITEMS

DRS. PAUL G. WESTON AND ADELAIDE ELLSWORTH, both members of the Warren County Medical Society, were married in July and are now on an extended trip through Europe.

DR. H. B. ROOP, of Columbia, has returned from Pittsburgh where he took a postgraduate course on Internal Medicine at the Postgraduate School of Medicine of the University of Pittsburgh.

DR. J. BLAIR SPENCER, assistant director of the Department of Public Welfare, of the city of Philadelphia, was recently appointed to succeed the late Dr. C. Lincoln Furbush as director of the Department of Public Health of that city.

THE 1923 LIST OF MEMBERS of the Medical Society of the State of Pennsylvania has been published in pamphlet form. Any member desiring a copy may obtain the same upon request to The Medical Society of the State of Pennsylvania, 230 State St., Harrisburg, Pa.

IT HAS BEEN ANNOUNCED that Dr. Maude E. Abbott, curator of the Medical Museum and lecturer in pathology at McGill University, Montreal, Canada, pioneer woman physician and author, will become a member of the faculty of the Woman's Medical College of Pennsylvania. She has accepted the chair of pathology and bacteriology with supervision of the clinical laboratory.

ANNOUNCEMENT HAS BEEN MADE of the marriage of Dr. Benjamin Franklin Royer, formerly of the State Health Department of Pennsylvania, to Miss Jessie Leona Ross. The ceremony was solemnized on July 19th at the American Consulate General in Halifax, Nova Scotia. Dr. Royer is engaged in health work for the government of the Dominion of Canada, with headquarters at Halifax, N. S.

GENERAL NEWS ITEMS

MR. HOMER N. CALVER has been elected acting Executive Secretary of the American Public Health Association to fill the vacancy caused by the resignation of Mr. A. W. Hedrich. Mr. Calver is a graduate in sanitary engineering of the Massachusetts Institute of Technology and has had experience in health work in South Carolina, in France during the war, and in New York City.

AMONG THE FORTHCOMING important meetings of special societies is the annual convention of The American Roentgen Ray Society. This is to be held in Chicago with headquarters at the Congress Hotel, the time of the meeting being from September 18th to 21st. A number of eminent foreign contributors will appear on the program, and the announcements indicate that treatment by high voltage x-ray will have a prominent place on the program.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination for Junior Medical Officer:

Applications will be received until December 28th. The examination is to fill vacancies in the Indian service, at entrance salaries ranging from $1,000 to $1,200 a year, plus the increase of $20 a month granted by Congress, and quarters, heat, and light; in the Coast and Geodetic Survey, at an entrance salary of $1,020 a year, plus the increase of $20 a month, and an allowance of $1 a day for subsistence while serving on board ship, except in the Philippines, where the allowance is $2.50 a day; and, in the Panama Canal Service, at an entrance salary of $250 a month.

Applicants must have been graduated from a medical school of recognized standing; or be senior students in such institution and furnish proof of graduation within six months from the date of making oath to the application.

Competitors will not be required to report for examination, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

SCHOLARSHIPS IN CHILD HEALTH

The American Child Health Association has appropriated $10,000 for resident and travel scholarships to physicians. These scholarships are for the purpose of affording an opportunity to secure training in child health work which will better fit them to fill positions with state and municipal divisions of child health or organizations engaged in child health work, or to enable physicians already engaged in the child hygiene field to secure additional training or experience. The fund will be allotted in amounts suited to the objectives arranged for the respective students.

Applicants eligible for these will be physicians who are in good standing in their local and state medical societies, and who shall present evidence of the following qualifications: (a) Graduation from a Grade A medical school and a license to practice in the state from which they apply. (b) Real interest in child health. (c) Either special instruction or practical experience in public health or child hygiene, including school health work. Those who have had such experience will be given preference in the selection of candidates.

The scholarships will be available during the school year of 1923-24 and during the summer of 1924. Awards are to be made soon. Freedom of choice of institutions with approved courses will be permitted.

Application blanks and further information will be furnished on request to the American Child Health Association, 370 Seventh Avenue, New York City.

MEDICAL WOMEN'S NATIONAL ASSOCIATION

The ninth annual meeting of the Medical Women's National Association was held in San Francisco, June 25th and 26th, in conjunction with the American Medical Association meetings, Dr. Grace N. Kimball, president; Dr. Kate Campbell Mead, president-elect. At the open session, Monday evening, Dr. Ray Lyman Wilbur, president-elect, A. M. A., delivered an eloquent and inspiring address on the "Power of the Minority."

At the open session, Tuesday morning, a Five-Year Program was presented by the Executive Committee and Council, and was adopted. This program is under five heads:

1. Continuation of the work of the Committee on Medical Service, American Women's Hospitals; Dr. Esther P. Lovejoy, Chairman, 637 Madison Ave., New York.

2. Federation of Medical Women's Organizations with the Medical Women's National Association, under Organization Committee; Gertrude A. Walker, Chairman, Whitefield, N. H.

3. Public Health, coöperating with A. M. A. Council on Health and Public Instruction, Hygiene, and Women's Foundation for Health, etc.; Dr. Elizabeth B. Thelberg, Chairman, Vassar College, Poughkeepsie, N. Y.

4. Committee for Medical Opportunities for Women, Dr. Sue Radcliff, Chairman, 21 Morris St., Yonkers, N. Y. Internships for young Graduate Members of the M. W. N. A., in hospitals conducted by the American Women's Hospitals; in Missionary Hospitals and in Hospitals in U. S. A., as well as opportunities for private practice, service on boards of health, government appointments, etc.

5. Publicity for the Medical Women's National Association through the Bulletin and an editorial staff, consisting of the President and Executive Committee, President-Elect and an Editor-in-Chief. Dr. Grace N. Kimball, Poughkeepsie, N. Y., was appointed Editor-in-Chief.

The *Bulletin*, which was published quarterly last year, will be continued as the official organ of the Association and sent to all members of the M. W. N. A.

An amendment to the constitution was passed, providing for group membership. This was in response to proposals for federation made last year by certain state societies of medical women.

Under the group membership amendment, organizations of women whose basis of membership conforms to that of the M. W. N. A., viz., membership in the A. M. A., may join the National as group members: Kansas State Medical Women's Society, New York State Medical Women's Society, Connecticut State Medical Women's Society, and Portland, Ore., State Medical Women's Club affiliated through their representatives at the San Francisco meeting. The Nebraska, Los Angeles and New England Medical Women's Societies signified their desire to take action regarding affiliation.

The M. W. N. A. had a most interesting exhibit, booth E of the A. M. A. Scientific and Educational Exhibits showing the work of the American Women's Hospitals in Greece and Serbia. Twenty hospitals and a large number of dispensaries are being run by this Committee of the M. W. N. A. in Greece alone, under the directorship of Dr. Mabel Elliott, New York Headquarters, 637 Madison Ave., New York; Dr. Esther P. Lovejoy, Executive Secretary.

Four periods in the A. M. A. moving picture theater were assigned to the National—a film of work in Greece, Crete and the quarantine work on Macronessi Islands, shown by Esther Lovejoy; and slides of hospital and surgical work in Serbia under Dr. Etta Gray.

Dr. Kate Campbell Mead, of Middletown, Conn., was installed as president. Dr. Katherine C. Manion, of Port Huron, Mich., was chosen president-elect.

The following officers and councilors were elected: First vice-president, Dr. Martha Welpton, San Diego; second vice-president, Dr. Marjory J. Potter, San Diego; third vice-president, Dr. Florence W. Duckering, Boston, Mass; secretary, Dr. Jessie W. Fisher, Middletown, Conn.; treasurer, Dr. Rosa H. Gantt, Spartanburg, S. C.

The 1924 annual meeting of the Medical Women's National Association will be held in Chicago, Ill.

Dr. O. Pine queries: Why so much uproar about the cancer mortality, the pneumonia mortality, and the tuberculosis mortality? Is not the automobile mortality rapidly diminishing all other mortality statistics?

Dr. O. Pine queries: Does "daylight saving" economize "twilight sleep"?

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 **Incorporated, December 20, 1890**

CALL TO 1923 SESSION

The object of this notice is to inform the members of the 1923 House of Delegates that in addition to the usual business incidental to the annual session, an amendment to the Constitution will be brought up for consideration and action.

COMMITTEES OF THE HOUSE OF DELEGATES

COMMITTEE ON CREDENTIALS

M. Edith MacBride, Chairman, Sharon.
Marsden D. Campbell, Loganton.
Carlisle N. Haines, Sayre.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

J. Newton Hunsberger, Chairman, Norristown.
Alexander Armstrong, White Haven.
Edward J. G. Beardsley, Philadelphia.

REFERENCE COMMITTEE ON SCIENTIFIC BUSINESS

Charles B. Maits, Chairman, Pittsburgh.
Frederick A. Fetherolf, Allentown.
Michael V. Ball, Warren.

REFERENCE COMMITTEE ON NEW BUSINESS

Samuel P. Mengel, Chairman, Wilkes-Barre.
Moses Behrend, Philadelphia.
George H. Robinson, Uniontown.

COMMITTEE ON PLACE OF MEETING

Frank G. Hartman, Chairman, Lancaster.
Edward E. Mayer, Pittsburgh.
Clarence R. Phillips, Harrisburg.

MEMBERS OF THE HOUSE OF DELEGATES*

ADAMS COUNTY

Harry E. Gettier, Littlestown, Pres.
  J. Percival Dalbey, Gettysburg, Secy.
J. Lawrence Sheetz, New Oxford.
  Albert Woomer, Cashtown.
  Tempest C. Miller, Abbottstown.

ALLEGHENY COUNTY (PITTSBURGH)

Ernest W. Willetts, Diamond Bank Bldg., Pres.
  William H. Mayer, Jenkins Arcade, Secy.
Richard J. Behan, Jenkins Arcade.
  I. Hope Alexander, Jenkins Bldg.
  Frederic T. Billings, Union Arcade.
Charles B. Maits, 6692 Kinsman Road.
  Richard E. Brenneman, Jenkins Arcade.
  George S. Bubb, 146 Greydon Ave., McKees Rocks.
Edward E. Mayer, Jenkins Arcade.
  L. Van Leer Brown, Castle Shannon.
  Richard G. Burns, 3930 Perrysville Ave.
Harold A. Miller, Jenkins Bldg.
  Thomas B. Carroll, Jenkins Arcade.
  Alexander H. Colwell, Highland Bldg.
John M. Thorne, Jenkins Arcade.
  Clyde L. Curll, 99 Hazlewood Ave.
  Bender Z. Cashman, Westinghouse Bldg.
Carey J. Vaux, City-County Bldg.
  Luba R. Goldsmith, 5802 Beacon St.
  Lester Hollander, Jenkins Arcade.
Joseph E. Willetts, Jenkins Arcade.
  J. Donald Iams, Jenkins Arcade.
  John A. Lichty, 5th Ave. and Neville St.
Joseph M. Douthett, East End Trust Bldg.
  A. Alexander MacLachlan, May Bldg.
  C. Bradford McAboy, East End Trust Bldg.
Edward B. Heckel, Jenkins Bldg.
  Evan W. Meredith, Jenkins Arcade.
  Franklin B. Miller, Fulton Bldg.
James I. Johnston, 4715 Fifth Ave.
  Henry T. Price, Westinghouse Bldg.
  Frank H. Rimer, Municipal Hospital.
George W. McNeil, Liberty Bldg.
  DeWayne Richey, Mercy Hospital.
  Ralph V. Robinson, Jenkins Arcade.
John W. Worrell, 110 S. Fairmount Ave.
  Wilton H. Robinson, Jenkins Arcade.
  John D. V. Singley, 812 N. Highland Ave.
William H. Mayer, Jenkins Arcade.
  Frederick B. Utley, Highland Bldg.

ARMSTRONG COUNTY

Charles H. Furnee, Kittanning, Pres.
  Jay B. F. Wyant, Kittanning, Secy.
William J. Bierer, Kittanning.
  Hugh I. Stitt, Kittanning.
  Edward H. McClister, Kittanning.

BEAVER COUNTY

John B. Ague, Beaver Falls, Pres.
  Boyd B. Snodgrass, Rochester, Secy.
Jefferson H. Wilson, Beaver.
  Robert M. Patterson, Beaver Falls.

BEDFORD COUNTY

Walter F. Enfield, Bedford, Pres.
  Norman A. Timmins, Bedford, Secy.
Maurice V. Brant, Cairnbrook.
  Harry I. Shoenthal, New Paris.
  Wilmot Ayers, Bedford.

BERKS COUNTY (READING)

David S. Grim, 232 N. Sixth St., Pres.
  John E. Livingood, 249 N. Fifth St., Secy.
Frank P. Lytle, Birdsboro.
  Leroy W. Frederick, 418 N. Tenth St.
  Abner W. Banscher, 336 N. Fifth St.
H. Philemon Brunner, 122 Oley St.
  Ira G. Shoemaker, 19 S. Ninth St.
  Winfield H. Ammarell, Birdsboro.

BLAIR COUNTY (ALTOONA)

Logan E. Hull, 1219 Thirteenth Ave., Pres.
  Charles F. McBurney, 604 Ninth St., Secy.
W. Albert Nason, Roaring Springs.
  John H. Galbraith, 1123 Thirteenth Ave.
  James S. Taylor, 1107 Thirteenth Ave.

BRADFORD COUNTY

Grant H. Gustin, Sylvania, Pres.
  Stanley D. Conklin, Sayre, Secy.
Carlyle N. Haines, Sayre.
  Howard C. Down, Towanda.
  Stanley D. Conklin, Sayre.

BUCKS COUNTY

John A. Weierbach, Quakertown, Pres.
  Anthony F. Myers, Blooming Glen, Secy.

* The offset names are the alternates and where street address only is given, the name of the city follows the name of the county.

George S. Deibert, Sellersville.
Arthur Wareham, Morrisville.
Roscoe C. Magill, Newhope.

BUTLER COUNTY (BUTLER)

Willis A. McCall, 205 S. Main St., Pres.
L. Leo Doane, Reiber Bldg., Secy.
M. Edward Headland, 216 Center Ave.
William J. Grossman, 312 W. Jefferson St.
Clarence E. Imbrie, 327 N. Main St.

CAMBRIA COUNTY (JOHNSTOWN)

John L. Sagerson, 431 Lincoln St., Pres.
Joseph J. Meyer, 425 Lincoln St., Secy.
James A. Lynch, Cresson.
Benjamin T. Bowers, St. Benedict.
Robert J. Sagerson, 340 Lincoln St.
John W. Barr, Swank Bldg.
Sylvester S. Kring, Johnstown Trust Bldg.
William J. Murray, 225 Market St.

CARBON COUNTY

Roger P. Batchelor, Palmerton, Pres.
Jacob A. Trexler, Lehighton, Secy.
Alexander Armstrong, White Haven.
Wilson P. Long, Weatherly.
Joseph J. Bellas, Lansford.

CENTER COUNTY

Harvey S. Braucht, Spring Mills, Pres.
Oscar W. McEntire, Howard, Secy.
James L. Seibert, Bellefonte.
Peter H. Dale, State College.
Oscar W. McEntire, Howard.

CHESTER COUNTY

Henry Pleasants, Jr., West Chester, Pres.
Joseph Scattergood, West Chester, Secy.
Thomas G. Aiken, Berwyn.
Joseph Hemphill, Jr., West Chester.
W. W. Woodward, West Chester.

CLARION COUNTY

Charles A. Fitzgerald, Clarion, Pres.
Charles C. Ross, Clarion, Secy.
John B. Miller, Sligo.
Albert J. Hepler, New Bethlehem.
John N. Camp, Foxburg.

CLEARFIELD COUNTY (CLEARFIELD)

Michael C. Dinger, Morrisdale, Pres.
John M. Quigley, 922 Dorey St., Secy.
John C. Sullivan, DuBois.
William S. Piper, 210 N. Second St.
Ward O. Wilson, 210 N. Second St.

CLINTON COUNTY

William J. Shoemaker, Lock Haven, Pres.
Robert B. Watson, Lock Haven, Secy.
Marsden D. Campbell, Loganton.
Saylor J. McGhee, 214 W. Main St., Lock Haven.
David W. Thomas, Lock Haven.

COLUMBIA COUNTY

Ralph E. Warntz, Nescopeck, Pres.
Charles B. Yost, Bloomsburg, Secy.
James R. Gemmill, Millville.
Willet P. Hughes, Bloomsburg.
Heister V. Hower, Berwick.

CRAWFORD COUNTY

David G. Snodgrass, Meadville, Pres.
Cornelius C. Laffer, Meadville, Secy.
Oliver H. Jackson, Meadville.
Carl M. Hazen, Titusville.
Samuel J. Dickey, Conneautville.

CUMBERLAND COUNTY

Parker W. Wagoner, Carlisle, Pres.
Calvin R. Rickenbaugh, Carlisle, Secy.
Harry A. Spangler, Carlisle.
Henry C. Lawton, Camp Hill.
Parker W. Wagoner, Carlisle.

DAUPHIN COUNTY (HARRISBURG)

Charles M. Rickert, 232 Maclay St., Pres.
Andrew J. Griest, Steelton, Secy.
Clarence R. Phillips, 1646 N. Third St.
W. Stewart Russell, Steelton.
David S. Funk, 300 N. Second St.
Edwin A. Nicodemus, 1437 Derry St.
Herbert F. Gross, 1501 N. Second St.
George L. Laverty, 226 State St.

DELAWARE COUNTY (CHESTER)

J. Clinton Starbuck, Media, Pres.
Walter E. Egbert, 601 E. Thirteenth St., Secy.
C. Irwin Stiteler, Fifth and Welsh Sts.
William B. Evans, Chester.
George H. Cross, 525 Welsh St.

ELK COUNTY

Maurice T. Leary, Ridgway, Pres.
Joseph E. Madara, St. Marys, Secy.
Joseph E. Madara, St. Marys.
Samuel G. Logan, Ridgway.
John C. McAllister, Ridgway.

ERIE COUNTY (ERIE)

Elmer G. Weibel, 215 W. Seventh St., Pres.
Roy S. Minerd, 24 W. Ninth St., Secy.
Fred Fisher, 343 E. Sixth St.
Chester H. McCallum, 219 W. Eighth St.
Anna Schrade, 716 Sassafras St.
Hugh M. Moorhead, 804 Peach St.
J. Elmer O'Brien, 302 E. Tenth St.
E. I. Steinberg, 134 W. Ninth St.

FAYETTE COUNTY

Robert E. Heath, Fairchance, Pres.
Jacob S. Hackney, Uniontown, Secy.
George H. Robinson, Uniontown.
Jesse Hazlett, Vanderbilt.
Charles H. LaClair, Uniontown.
Harry J. Bell, Dawson.
George W. Gallagher, Connellsville.
James E. Van Gilder, Uniontown.

FRANKLIN COUNTY

Fairfax G. Wright, Chambersburg, Pres.
Samuel D. Shull, Chambersburg, Secy.
John W. Croft, Waynesboro.
J. Burns Amberson, Waynesboro.
Frank N. Emmert, Chambersburg.

GREENE COUNTY

Rufus E. Brock, Waynesburg, Pres.
Harry C. Scott, Waynesburg, Secy.
Thomas N. Millikin, Waynesburg.
W. Burdett Clendenning, Jollytown.
Robert W. Norris, Waynesburg.

HUNTINGDON COUNTY

Fred R. Hutchison, Huntingdon, Pres.
John M. Beck, Alexandria, Secy.
Cloyd G. Brumbaugh, 805 Mifflin St., Huntingdon.
George G. Harmon, 523 Penn St., Huntingdon.
Marshall B. Morgan, Sixth and Penn Sts., Huntingdon.

INDIANA COUNTY

Thomas J. McNelis, Homer City, Pres.
James M. Torrence, Indiana, Secy.
Todd R. Boden, McIntyre.
Harry B. Neal, Indiana.
Alexander H. Stewart, Indiana.

JEFFERSON COUNTY

Alverdi J. Simpson, Summerville, Pres.
Charles W. Johnston, DuBois, Secy.
James C. Borland, Falls Creek.
John H. Murray, Punxsutawney.

JUNIATA COUNTY

Benjamin H. Ritter, McCoysville, Pres.
Brady F. Long, Mifflin, Secy.

Joseph S. Brown, Okeson.
Samuel F. Metz, Thompsontown.
Isaac G. Headings, McAllisterville.

LACKAWANNA COUNTY (SCRANTON)

Charles B. Noecker, Connell Building, Pres.
George A. Clark, Connell Building, Secy.
Leonard G. Redding, Scranton Life Bldg.
John J. Sullivan, Jr., Traders Bank Bldg.
Addison W. Smith, Union National Bank Bldg.
Daniel E. Berney, Connell Bldg.
William R. Davies, Traders Bank Bldg.
Irwin W. Severson, 225 Jefferson Ave.
Frederick J. Bishop, 220 Connell Bldg.
John J. Brennan, 230 S. Main Ave.
Joseph C. Reifsnyder, Connell Bldg.

LANCASTER COUNTY (LANCASTER)

Horace C. Kinzer, 128 N. Duke St., Pres.
Charles P. Stahr, 129 E. Walnut St., Secy.
J. Paul Roebuck, 233 N. Duke St.
Byron J. Reemsnyder, Ephrata, R. D. 3.
Harry B. Roop, Columbia.
Frank G. Hartman, 136 N. Duke St.
Jacob E. Hostetter, Gap, R. D. 1.
Frank Alleman, 420 W. Chestnut St.

LAWRENCE COUNTY

Eliah Kaplan, New Castle, Pres.
William A. Womer, New Castle, Secy.
Louis W. Grossman, New Castle.
James M. Blackwood, New Castle.
Benjamin M. Berger, New Castle.

LEBANON COUNTY

Seth A. Light, Lebanon, Pres.
W. Horace Means, Lebanon.
J. DeWitt Kerr, Lebanon.
Franklin B. Witmer, Lebanon.
Walter H. Brubaker, Lebanon.

LEHIGH COUNTY (ALLENTOWN)

Frederick A. Fetherolf, 941 Hamilton St., Pres.
J. Treichler Butz, 1104 Hamilton St., Secy.
Frederick R. Bausch, 109 N. Second St.
David H. Parmet, 436 Tilghman St.
Ralph F. Merkle, 219 N. Seventh St.
Frank S. Boyer, 16 N. Second St.
William A. Hausman, Jr., 1116 Hamilton St.
John Schneller, Catasauqua.

LUZERNE COUNTY (WILKES-BARRE)

N. Louis Schappert, 57 S. Washington St., Pres.
Edward W. Bixby, 61 W. Ross St., Secy.
Samuel P. Mengel, 181 S. Franklin St.
Lewis H. Taylor, 83 S. Franklin St.
Peter P. Mayock, 70 S. Main St.
Charles Long, 33 S. Washington St.
Daniel G. Robinhold, 1170 Wyoming Ave., Forty-fort.
Alfred W. Grover, 256 Maple St., Kingston.
Walter Davis, 24 S. Washington St.
George R. Drake, 135 W. Main St., Plymouth.
Patrick F. McHugh, 211 Parrish St.

LYCOMING COUNTY (WILLIAMSPORT)

J. Louis Mansuy, Ralston, Pres.
Walter S. Brenholtz, 151 E. Third St., Secy.
John A. Campbell, 838 Funston Ave.
Wesley F. Kunkle, 519 Seventh Ave.
G. Alvin Poust, Hughesville.
Joseph W. Albright, Muncy.
Edward Everett, Masten.
J. Frank Gordner, Montgomery.

MCKEAN COUNTY

William A. Ostrander, Smethport, Pres.
Francis DeCaria, Bradford, Secy.
William A. Ostrander, Smethport.
Samuel R. Huff, Eldred.
Lawrence W. Dana, Kane.

MERCER COUNTY

William W. Richardson, Mercer, Pres.
Edith MacBride, Sharon, Secy.
Edith MacBride, Sharon.
William W. Wyant, Farrell.
Clarence W. McElhaney, Greenville.

MIFFLIN COUNTY

Charles M. Johnson, McVeytown, Pres.
James A. C. Clarkson, Lewiston, Secy.
John P. Getter, Belleville.
Henry W. Sweigart, Lewistown.
Frederick A. Rupp, Lewistown.

MONROE COUNTY

John H. Stearns, Delaware Water Gap, Pres.
William R. Levering, Stroudsburg, Secy.
J. Anson Singer, E. Stroudsburg.
Walter L. Angle, E. Stroudsburg.
Eugene H. Levering, Stroudsburg.

MONTGOMERY COUNTY

Willis Read Roberts, Norristown, Pres.
Edgar S. Buyers, Norristown, Secy.
J. Newton Hunsberger, Norristown.
Elmer G. Kreibel, Norristown.
R. Vincent Wolfe, Skippack.
Herbert A. Bostock, Norristown.
Winfred J. Wright, Skippack.
J. Elmer Gotwals, Phœnixville.

MONTOUR COUNTY

Enoch H. Adams, Danville, Pres.
John H. Sandel, Danville, Secy.
J. Allen Jackson, Danville.
Ernest T. Williams, Danville.
Robert S. Patten, Danville.

NORTHAMPTON COUNTY

Paul Correll, Easton, Pres.
Victor S. Messinger, Easton, Secy.
John C. Keller, Wind Gap.
Clinton F. Stofflet, Pen Argyl.
Cardinal C. McCormick, Pen Argyl.
Francis J. Dever, Bethlehem.
Adolph S. Gabor, Bethlehem.
Delbert K. Santee, Bethlehem.

NORTHUMBERLAND COUNTY

Lloyd M. Holt, Sunbury, Pres.
Charles H. Swenk, Sunbury, Secy.
Horatio W. Gass, Sunbury.
George W. Reese, Shamokin.
Henry T. Simmonds, Shamokin.

PERRY COUNTY

Lenus A. Carl, Newport, Pres.
A. Russell Johnston, New Bloomfield, Secy.
Edward E. Moore, New Bloomfield.
Benjamin F. Beale, Duncannon.

PHILADELPHIA COUNTY (PHILADELPHIA)

David Riesman, 1715 Spruce St., Pres.
Henry G. Munson, 4935 Catherine St., Secy.

Term expiring 1923

Thomas R. Currie, 512 W. Lehigh Ave.
R. Powers Wilkinson, 1613 S. Broad St.
Vincent J. Fenerty, 2217 E. Cumberland St.
Arthur C. Morgan, 2018 Chestnut St.
Dudley T. Cooke, 1536 S. Broad St.
Irwin S. Meyerhoff, 1727 N. Sixteenth St.
Edward A. Shumway, 2046 Chestnut St.
Joseph McIver, 4634 Chester Ave.
James F. Donnelly, 1605 N. Fifteenth St.
Edward B. Krumbhaar, Box 4310 Chestnut Hill.
Russell S. Boles, Overbrook and Fifty-third Sts.
E. Quin Thornton, 1331 Pine St.
George Wilson, 5000 Walnut St.
Charles F. Nassau, 1710 Locust St.

Rae S. Dorsett, 213 S. Forty-sixth St.
John A. McGlinn, 113 S. Twentieth St.
John S. Musser, 262 S. Twenty-first St.
Thomas Klein, 1717 Pine St.
Paul B. Cassidy, 2037 Pine St.
Elmer H. Funk, 1318 Spruce St.
P. Brooke Bland, 1621 Spruce St.
T. Turner Thomas, 1905 Chestnut St.
Frederick S. Baldi, 2117 Porter St.
Damon B. Pfeiffer, 2028 Pine St.
William S. Higbee, Belgravia, 1811 Chestnut St.
D. Clinton Guthrie, 722 N. Fortieth St.
William T. Hamilton, 1221 W. Lehigh Ave.
John Welsh Croskey, 3325 Powelton Ave.
L. Napoleon Boston, 2024 Chestnut St.
Samuel A. Carpenter, 2265 N. Sixteenth St.

Term expires 1924

Moses Behrend, 1738 Pine St.
Walter S. Cornell, 729 City Hall.
Mary Buchanan, 2106 Chestnut St.
William N. Bradley, 1725 Pine St.
I. Rendall Strawbridge, 1418 N. Fifteenth St.
James H. Arnett, 2540 N. Eleventh St.
Seth A. Brumm, 818 Stock Exchange Bldg.
Henry F. Page, 315 S. Sixteenth St.
Francis H. Adler, 313 S. Seventeenth St.
Henry Beates, Jr., 260 S. Sixteenth St.
Marian H. Rea, Gulph Rd., Bryn Mawr.
Collin Foulkrod, 3910 Chestnut St.
Charles A. E. Codman, 4116 Spruce St.
Louis Edeiken, 2412 S. Fifth St.
L. Waller Deichler, 2028 Chestnut St.
L. Webster Fox, 303 S. Seventeenth St.
William H. Good, 5309 Rising Sun Lane.
Stanley Q. West, 138 W. Walnut Lane, Gtn.
J. Norman Henry, 1906 Spruce St.
William C. Ely, 3912 Chestnut St.
McCluney Radcliffe, 1906 Chestnut St.
George A. Knowles, 4812 Baltimore Ave.
A. Graeme Mitchell, 1725 Pine St.
John H. Remig, 805 S. Twelfth St.
Edward J. G. Beardsley, 258 S. Sixteenth St.
Russell S. Boles, Overbrook and Fifty-third Sts.
Joseph C. Doane, Philadelphia General Hospital.
John W. West, 1125 Wallace St.
G. Mason Astley, 5317 Master St.
Ralph E. Getelman, 2011 Chestnut St.
George C. Yeager, 1419 E. Susquehanna Ave.
Irving W. Hollingshead, 123 S. Eighteenth St.
John A. Kolmer, Cynwyd.

POTTER COUNTY

Michael R. Long, Galeton, Pres.
Ross H. Jones, Coudersport, Secy.
Nathan W. Church, Ulysess.
A. Jackson Colcord, Port Allegany.

SCHUYLKILL COUNTY

Merchant C. Householder, Pottsville, Pres.
Arthur B. Fleming, Tamaqua, Secy.
J. Spencer Callen, Shenandoah.
T. Lamar Williams, Mt. Carmel.
David Taggert, Frackville.
George R. S. Corson, Pottsville.
George O. O. Santee, Cressona.
George H. Moore, Schuylkill Haven.

SNYDER COUNTY

Russell W. Johnston, Selins Grove, Pres.
John O. Wagner, Beaver Springs, Secy.
Edward W. Toole, Selins Grove.
Percy E. Whiffen, McClure.
Milton E. Wagner, McClure.

SOMERSET COUNTY

William P. Shaw, Berlin, Pres.
H. Clay McKinley, Meyersdale, Secy.
Frank Sass, Boswell.
Bruce Lichty, Meyersdale.

SULLIVAN COUNTY

George C. Swope, Mildred, Pres.
Philip G. Biddle, Dushore, Secy.
Justin L. Christian, Lopez.
George C. Swope, Mildred.

SUSQUEHANNA COUNTY

Dever J. Peck, Susquehanna, Pres.
Edward R. Gardner, Montrose, Secy.
Edward R. Gardner, Montrose.
Dever J. Peck, Susquehanna.
Horace D. Washburn, Susquehanna.

TIOGA COUNTY

Fay X. Field, Wellsboro, Pres.
Solomon P. Hakes, Tioga, Secy.
Lloyd G. Cole, Blossburg.
John H. Doane, Mansfield.
Farnham H. Shaw, Wellsboro.

UNION COUNTY

Amos V. Persing, Allenwood, Pres.
Charles A. Gundy, Lewisburg, Secy.
Ralph Steans, Lewisburg.
Oliver W. H. Glover, Laurelton.
Charles H. Dimm, Mifflinburg.

VENANGO COUNTY

M. Ada McKee, Oil City, Pres.
John F. Davis, Oil City, Secy.
Charles Brown, Franklin.
Paul R. Cunningham, Franklin.
Mayo Robb, Seneca.

WARREN COUNTY

Ralph Knapp, Youngsville, Pres.
Elizabeth S. Beaty, 100 East St., Warren, Secy.
Michael V. Ball, Warren.
Irving G. Hyer, Clarendon.
Robert B. Mervine, Sheffield.

WASHINGTON COUNTY

Alexander N. Booth, Bentleyville, Pres.
Charles C. Cracraft, Claysville, Secy.
William Douglas Martin, Dunn's Station.
Homer P. Prowitt, Washington.
A. LaGrand Runion, Canonsburg.
Leonard C. Honesty, Washington.

WAYNE COUNTY

William T. McConvill, Honesdale, Pres.
Hugh Stevenson, III, Waymart, Secy.
Arthur J. Simons, Newfoundland.
Edward O. Bang, S. Canaan.
Allen A. Berlin, Newfoundland.

WESTMORELAND COUNTY

Thomas St. Clair, Latrobe, Pres.
Myers W. Horner, Mount Pleasant, Secy.
L. Raymond Smith, Jeannette.
John S. Anderson, Greensburg.
Martin E. Griffith, Monessen.
Ellsmer L. Piper, Export.
Urban H. Reidt, Jeannette.
Lee Monte Sankey, Jeannette.

WYOMING COUNTY

Van C. Decker, Nicholson, Pres.
Herbert L. McKown, Tunkhannock, Secy.
William W. Lazarus, Tunkhannock.
T. Oliver Williams, Tunkhannock.

YORK COUNTY (YORK)

Charles H. May, 1207 N. George St., Pres.
Maurice C. Wentz, Weiser Bldg., Secy.
James C. May, 1207 N. George St.
John A. Melsheimer, Hanover.
Charles Rea, 107 E. Market St.
George E. Holtzapple, George & Princess Sts.
Samuel J. Pfaltzgraff, 440 W. Market St.
W. Frank Gemmill, 135 E. Market St.

REPORTS OF OFFICERS AND COMMITTEES

REPORT OF THE SECRETARY

To the President and House of Delegates:

Per Capita Receipts, August 17, 1922, to August 17, 1923:		
For 1921 Assessment 1 member	$5 00	
For 1922 Assessment 126 members (including 29 half year members)	557 50	
For 1923 Assessment 7,232 members (including 3 half year members)	36,152 50	
		$36,715 00
Medical Defense allotment	$5,507 25	
Medical Benevolence allotment	1,101 45	
Endowment Fund	1,200 00	
		7,808 70
Net from dues available for current yearly expenditures		$28,906 30
Gross receipts from JOURNAL		8,020 78
Gross receipts from 1922 commercial exhibit		3,572 51
Gross rental from Harrisburg property (April 25 to August 31)		995 00
		$41,494 59
Rebated to Philadelphia County Medical Society on account of medical defense		493 75
Total available for current yearly administrative expenditures		$41,000 84
Total current yearly administrative expenditures		$36,824 50

PRINCIPAL ITEMS OF ADMINISTRATIVE EXPENSE

Atlantic Medical Journal	$16,334 09
Executive Secretary's office	10,277 83
Annual session	4,066 36
Secretary's office	3,739 95
Traveling expenses	975 00
Printing and stationery	717 00
Installing new accounting system	600 00

MEMBERSHIP

The total paid membership August 17, 1922, was 7,202; the total paid membership August 17, 1923, was 7,232, with the following component society distribution for 1922 and 1923 respectively: Adams County, 26, 24; Allegheny County, 1,195, 1,231; Armstrong, 58, 55; Beaver, 62, 64; Bedford, 16, 16; Berks, 138, 137; Blair, 82, 87; Bradford, 50, 47; Bucks, 78, 75; Butler, 50, 52; Cambria, 129, 136; Carbon, 29, 28; Center, 28, 26; Chester, 72, 73; Clarion, 31, 31; Clearfield, 66, 66; Clinton, 22, 24; Columbia, 44, 40; Crawford, 53, 50; Cumberland, 41, 36; Dauphin, 153, 156; Delaware, 90, 87; Elk, 25, 24; Erie, 131, 135; Fayette, 115, 118; Franklin, 53, 53; Greene, 28, 28; Huntingdon, 39, 35; Indiana, 60, 63; Jefferson, 53, 53; Juniata, 12, 12; Lackawanna, 194, 232; Lancaster, 128, 128; Lawrence, 57, 56; Lebanon, 37, 38; Lehigh, 109, 110; Luzerne, 224, 234; Lycoming, 113, 112; McKean, 43, 40; Mercer, 74, 71; Mifflin, 25, 26; Monroe, 15, 14; Montgomery, 156, 154; Montour, 23, 24; Northampton, 135, 137; Northumberland, 59, 60; Perry, 15, 14; Philadelphia, 1,970, 1,924; Potter, 15, 15; Schuylkill, 113, 127; Snyder, 11, 10; Somerset, 45, 46; Sullivan, 8, 6; Susquehanna, 17, 18; Tioga, 30, 30; Union, 17, 16; Venango, 54, 56; Warren, 48, 49; Washington, 122, 121; Wayne, 27, 25; Westmoreland, 151, 151; Wyoming, 11, 12; York, 124, 117.

During the year we lost one hundred and eight of our members by death, ten by removal, twenty-two by resignation, one by suspension and one by expulsion.

Eleven societies show no change in membership; twenty-five societies, a gain; and twenty-seven, a loss.

MEDICAL DEFENSE

Applications for defense against suits for alleged malpractice since September 1, 1922, total 11, numbering from Case No. 156 to Case No. 166.

Case No. 156. Application dated September 10, 1922. Alleged error in recommending commitment as insane. Summons served August 24, 1922. Appearance made in court.

Case No. 157. Application dated September 26, 1922. Compound comminuted fracture of lower leg. Summons served September 15, 1922. Alleged faulty treatment. Suit not entered against attending physician until physician entered suit for his fee. Case came to trial. Under instructions from the Court, the Jury returned a verdict in favor of the defendant.

Case No. 158. Application dated September 28, 1922. Alleges neglect in precautions against wife's suicide. Summons served September 26. Appearance made in court.

Case No. 159. Application dated October 5, 1922. Alleges infection of one eye from contact with ether during anesthesia. The attorney for the defendant secured in advance an order from the court for full clinical and laboratory examinations, same to be used should trial judge refuse to admit testimony of physicians who had previously examined and treated the plaintiff, on the ground that such testimony was privileged testimony. Case not yet placed on the docket.

Case No. 160. Application dated October 5, 1922. Defendant was the anesthetist in case described as No. 159.

Case No. 161. Application dated October 30, 1922. Alleges faulty treatment of pelvic abscess which resulted fatally. Summons served October 28. Appearance made in court.

Case No. 162. Application dated February 27, 1923. X-ray burn. Summons served February 20, 1923. No further developments.

Case No. 163. Application dated February 24, 1923. X-ray burn. Summons served February 15, 1923. No further developments.

Case No. 164. Application dated January 11, 1923. Bill of complaint not filed but applicant believes that it will be alleged that an x-ray exposure was responsible for a severe cellulitis. Summons served January 3, 1923. Appearance made in court.

Case No. 165. Application dated May 21, 1923. Alleges failure to recognize and properly treat dislocated shoulder. Summons served May 15, 1923. Appearance made in court.

Case No. 166. Application dated June 16, 1923. Alleges bad result in fracture of femur due to application by defendant of plaster cast without first ascertaining that such fracture had been properly reduced. Summons served June 13, 1923.

The following cases have been closed during the past year:

Case No. 124. Court entered non-suit in default of the appearance of the plaintiff.

Case No. 97. Compulsory non-suit.

Case No. 157. See above.

Case No. 145. Concluded after the following unique history: When this case was placed on the general trial list it was ruled out by the defendant's attorney for arbitration under the Compulsory Arbitration Act. Judgment was rendered by the Arbitrators in favor of the defendant because neither the plaintiff nor his attorney appeared. This judgment was transferred to

the Common Pleas. The plaintiff then having failed to enter his appeal within the statutory period of twenty days, his cause of action was at an end.

Case No. 140. Compulsory non-suit granted at the close of the plaintiff's testimony.

Case No. 143. Offer to settle case refused. Effort by plaintiff to accept non-suit opposed by defendant. When case came to court, attorney for plaintiff submitted no evidence beyond presenting the plaintiff. The presiding judge ordered a verdict for the defendant, placing the court costs on the plaintiff.

Case No. 152. Threatened suit has been abandoned.

The Committee of Counsel, supported by action of the Board of Trustees, refused assistance from the Medical Defense Fund to two applicants, in one instance because the member delayed five months after entrance of suit before applying for assistance, and in the other because he was not a member in good standing at the time of the alleged malpractice. The officers of the county medical society in which the latter applicant holds membership were severely criticized because they had accepted a transfer card from another state medical society after having been notified by the officers of this Society that such transfer card was valueless.

We have during the last year actually expended $912.00 in the defense of our members in contrast with $310.00 in 1922; $150.00 in 1921; and $4,209.00 in 1920.

BOARD OF TRUSTEES

Your Board of Trustees held their four regularly scheduled meetings in Harrisburg. When possible, meetings of important standing committees were held on the same date in Harrisburg in order that members of the Board might be present for consultation by members of such committees.

During the past year the Board, after careful consideration, purchased an improved property at 230 State Street, Harrisburg. The purchase price, together with the necessary expense involved in improving and converting the building to suit the purpose of the Society, totals approximately $21,000. The building is a three-story brick of old style and construction, situated on a lot 26x113 feet to a ten-foot private alley, on State Street, six doors from the corner of North Third Street.

Those who are familiar with the surroundings of the Capitol Building in Harrisburg will recognize the location of this property as being particularly advantageous, being on the boulevard leading from the front entrance of the Capitol to the Susquehanna River, six doors from the corner of the street running parallel with the front of the Capitol grounds.

The building provides adequate quarters for the office of the Executive Secretary and permits the subletting of two small apartments. It is apparent from the experience of the Board with this property to date that the Society, after payment of taxes, insurance and current upkeep expenses, may occupy its own office rent free, and have in addition a yearly income on the total investment of at least four per cent.

During the past year, after a great deal of work by its Publication Committee, the Board completed and installed plans for issuing a joint journal with the Delaware State Medical Society. If the hopes of the Board are realized, we may later in this joint journal include the publications and official transactions of the medical societies of other bordering states.

Your Secretary is of the opinion that during the past year the finances of our Society, the publication of our journal and the interim control of all the Board's functions have been faithfully administered by our Board of Trustees. The duties of the individual members of the Board, entailing as they do sacrifice of much time and effort, may at times have interfered to a certain extent with the exercise of the duties of these members as Councilors. However, it is sincerely to be hoped that during the coming year the Councilors will find it possible to fulfil all their obligations to the county societies in their respective districts. There is no other office in our Society the duties of which transcend in importance the visiting functions of the office of Councilor.

PUBLIC HEALTH LEGISLATION

The constructive results of the efforts directed by the Medical Legislative Conference to influence the creation of good public health laws during the 1923 session of the Pennsylvania Legislature were so disappointing that we recommend to the House of Delegates the following definite program to become the immediate and continuous objective of appropriate committees in all component societies in support of our representatives in the Medical Legislative Conference of Pennsylvania:

1. The passage of a "one board" licensing bill regulating the practice of all who treat the sick or injured.
2. Satisfactory modification of the existing Workmen's Compensation Law.
3. Opposition to any proposed laws tending to defeat medical research or the practice of preventive medicine.

EDUCATIONAL PROPAGANDA

Our Committee on Public Relations made a splendid impression by its efforts throughout the state in originating and directing a campaign in behalf of "diphtheria prevention week." The results accomplished in the various counties were of course entirely proportionate to the efforts put forth in coöperation by similar committees in the component county societies. That there is need for continuous campaigning in the interest of preventive medicine and for the spreading to the general public of judicious educational advertising matter by our Committee on Public Relations is obvious to all who recognize the slight conception in the minds of the majority of people regarding the large part played by doctors of medicine in the world's scientific, economic and social progress. Hundreds of members of the Illinois State Medical Society have recently contributed ten dollars each to a fund for the spread of judicious educational propaganda regarding the history of the various systems of treating the sick and injured.

POSTGRADUATE MEDICAL EDUCATION

Coöperation between our Society and the Graduate School of Medicine of the University of Pennsylvania has during the past year resulted in the beginning of extension postgraduate medical courses in Philadelphia, Lackawanna, Bradford and Schuylkill counties. Those of our members having the good fortune to be in attendance upon these courses are enthusiastic and Dean Meeker has high hopes for extending, within the next two years, the scope of the plan to include counties throughout Western Pennsylvania. Dean Meeker has expressed the hope that the plan may be arranged for coöperation with the University of Pittsburgh and Pittsburgh hospitals. He states that the results to date are most encouraging and indicate that continued adequate support by the profession and by the state will insure the final success of this movement which will be of no little value to the whole citizenry.

We have missed, during the last few months, the kindly advice and assistance of former Secretary, Editor and President, Dr. C. L. Stevens, whose death occurred on February 19, 1923. Our Society will benefit for years to come from his influence for the best that is in the organized medical profession of his county, state and nation. Dr. Stevens will be sadly missed during the deliberations of the House of Delegates. We express our deep sorrow for the loss of this wise counselor.

In closing we wish to express our appreciation of the coöperation received from the officers of this Society and its component societies.

Respectfully submitted,

WALTER F. DONALDSON, *Secretary.*

REPORT OF THE EXECUTIVE SECRETARY

To the Board of Trustees:

At the beginning of this year's session of the Legislature a very perplexing problem was presented to those interested in legislation, in that no leadership was apparent in either the House or the Senate. For the first time in many years no group of men was sufficiently in control to be able to anticipate events and advise in regard to legislation. For this reason considerable anxiety was experienced by those concerned with medical legislation, and the results at the close of the session were evidence that these fears were not groundless.

We had hoped to secure an amendment to the Workmen's Compensation Act of 1915, clarifying the section relating to medical, surgical and hospital service so that no misunderstanding would remain as to how the cost for such services should be distributed. Amendments were carefully drafted, and had it not been for the stupidity and, we would almost think, intended mistakes on the part of the printers, we might have been more successful in their passage. Be that as it may, we were opposed by the self-insurers and certain corporations who appeared towards the end of the session to combat the interests of the medical profession.

We believe that surgeons practicing under the Workmen's Compensation Act must present a more urgent appeal and have a more definite purpose in view if this act is to be amended at the next session of the Legislature. There are several plans which, if put into effect, will bring to the employer a better understanding of the relation between the surgeon, the hospital, the insurance carrier and himself.

Legislation affecting the healing art was sufficiently interesting to stimulate active work in behalf of practitioners of special forms of healing. Our previous reports are sufficiently clear as to the results in this field.

Had not the Code, introduced by the organization and endorsed by the Governor of the state, contained measures affecting the Medical Practice Act, we might have been able to secure consideration of our suggestion for the establishment of one board to examine and license all practitioners of any form of the healing art. During the next two years the profession will have an opportunity to observe the effect of the Code as applied to the healing art, and if it is deemed wise, another attempt can then be made to correct such evils as may exist, by the passage of a one-board bill.

Reports previously published in the JOURNAL deal with the results of all other legislation, and it is, therefore, not necessary to refer to specific legislation at this time. We are, however, impressed with the fact that the time to affect legislation is at the primaries even more than at the election of our legislators. If this opportunity is neglected we cannot hope for any better results than have been secured in the past.

The year 1922-23 has seen many changes for the better in the offices of the Executive Secretary. The Board of Trustees should be congratulated upon their keen foresight in purchasing a home for the transaction of the Society's business in Harrisburg, for the property purchased is considered a bargain by those who understand real estate values. It makes it possible for the offices of the Executive Secretary to have a permanent abode, and guarantees greater security for the future work of the JOURNAL. It also offers the opportunity, should business conditions and the work of the Society warrant, to erect a more modern building.

The time of the Executive Secretary during the past year has been devoted largely to work in the office and in the Legislature. We have not, however, neglected any opportunity for consultation in regard to the organization work in the field.

There is a growing feeling, which has been exemplified in many ways, that the medical practice of the future will be not only curative but also preventive. The work in this field which the Committee on Public Relations has been doing since its organization speaks well for the future of this Committee, especially its work in coöperation with the county societies. A suggestion is offered that during the coming year a special effort be made to interest the members of the county societies in devoting more attention to preventive medicine. This office has assisted during the past year, and will continue to assist in every way possible the work of this committee, as well as to be of any other service to the medical profession of the state.

REPORT ON THE JOURNAL

In April, 1923, the proposed consolidation of the *Pennsylvania Medical Journal* and the *Delaware State Medical Journal,* forming the ATLANTIC MEDICAL JOURNAL, the official publication of the two state societies, was consummated. This arrangement was approved by the House of Delegates and carried out by the Committee on Publication with the thought that in associating with other states a better and more influential, as well as a more profitable journal could be published. The present association with the state of Delaware is very congenial, and affords us an opportunity to exemplify in the East the plan that has been so successful in the West—the association of several societies in the publication of a common official organ.

This change has offered an opportunity to alter somewhat the make-up of the JOURNAL in a manner which we trust our readers will appreciate. The size of the JOURNAL has not been increased but it is offered to the profession in a somewhat different setting, both externally and internally. It goes without saying that both the Editor and the Committee on Publication are anxious to receive contributions and suggestions as to how the JOURNAL may be improved for the greater benefit of the medical profession of the states of Pennsylvania and Delaware.

Following is a statement showing income from the JOURNAL from August 15, 1922, to August 15, 1923:

Advertising	$7,519.56
Subscriptions	158.00
Authors' payments for cuts	239.73
Sale of single JOURNALS	63.84
Miscellaneous income	39.65
Total	$8,020.78

REPORT ON THE ANNUAL SESSION

At this writing (August 9, 1923) plans for the seventy-third annual session are well under way. The William Penn Hotel, Pittsburgh, has been engaged to house the convention. Quarters have been provided on the 17th floor, with one exception: the Medical Section will meet in the Hawaiian Room, which was not available on previous occasions, but which will afford more commodious quarters than we have been able to offer before. This room is located on the ground floor and can easily be reached by elevator or by stairs from the lobby.

The scientific exhibit will be held on the balcony and upper corridor of the Ball Room, and can be reached by the stairway which leads off near the elevators from the 17th floor.

The commercial exhibit will occupy the corridors, Reception Room and rooms E, F and G on the 17th

floor. Eighty-six booths of reasonable size will be erected, and at the present time all but a few of these have been sold. The firms that have reserved space are of the type and variety found at the American Medical Association exhibits, which speaks well for the favor with which these firms look upon the sessions of the Medical Society of the State of Pennsylvania.

Arrangements have been made to hold the usual reception to the President on Wednesday night, followed by the annual ball, at which refreshments will be served, and for which a good orchestra has been engaged.

An excellent program has been prepared by the Committee on Scientific Work and the Allegheny County Society has made arrangements to entertain very delightfully both the visiting members and their ladies.

The management anticipates a successful and well worth while session and bespeaks the coöperation of both officers and members to make it an occasion worth remembering. Respectfully submitted,

FREDERICK L. VAN SICKLE,
Executive Secretary.

REPORT OF THE TREASURER

GENERAL RECEIPTS

1922

Sept. 1, to cash, balance on hand	$21,602.77
Sept. 25, to cash received for account of Executive Secretary and Editor	470.69
Oct. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	636.96
No. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	372.22
Nov. 23, to cash received from Dr. W. F. Donaldson, membership dues	277.50
Nov. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	486.14
Nov. 27, to cash received from Dr. F. L. Van Sickle, Executive Secretary	3,722.51
Nov. 27, to cash received from Dr. W. F. Donaldson, membership dues	137.50
Nov. 27, to cash received from Dr. W. F. Donalsdon, membership dues	35.00
Dec. 19, to cash received from Dr. F. L. Van Sickle, Executive Secretary	175.73
Dec. 23, to cash received from Dr. W. F. Donaldson, membership dues	380.00
Dec. 23, to cash received from Dr. W. F. Donaldson, membership dues	77.50
Dec. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	379.01

1923

Jan. 4, to cash received from Dr. F. L. Van Sickle, Executive Secretary	645.84
Jan. 4, to cash received from Dr. W. F. Donaldson, membership dues	30.00
Jan. 4, to cash received from Dr. W. F. Donaldson, membership dues	870.00
Jan. 5, to cash transferred from Medical Defense Fund for investment	15,000.00
Jan. 5, to cash transferred from Medical Benevolence Fund	3,500.00
Jan. 5, to cash transferred from Endowment Fund	1,000.00
Jan. 23, to cash received from Dr. W. F. Donaldson, membership dues	3,505.00
Jan. 23, to cash received from Dr. W. F. Donaldson, membership dues	15.00
Jan. 26, to cash received from Dr. F. L. Van Sickle, Executive Secretary	524.40
Jan. 26, to cash received from Dr. W. F. Donaldson, membership dues	1,765.00
Feb. 9, to cash received from Dr. F. L. Van Sickle, Executive Secretary	244.79
Feb. 10, to cash received from Dr. W. F. Donaldson, membership dues	2,015.00
Feb. 14, to cash received from Dr. W. F. Donaldson, difference between amount drawn from special funds and amount invested	58.58
Mar. 1, to cash received from Dr. F. L. Van Sickle, Executive Secretary	614.49
Mar. 1, to cash received from Dr. W. F. Donaldson, membership dues	8,445.00
Mar. 19, to cash received from Dr. W. F. Donaldson, membership dues	4,530.00
Apr. 4, to cash received from Dr. W. F. Donaldson, membership dues	8,445.00
Apr. 6, to cash received from Dr. F. L. Van Sickle, Executive Secretary	660.91
Apr. 21, to cash received from Dr. W. F. Donaldson, membership dues	4,445.00
May 8, to cash received from Dr. W. F. Donaldson, membership dues	730.00
May 8, to cash received from Dr. F. L. Van Sickle, Executive Secretary	726.34
June 1, to cash received from Dr. W. F. Donaldson, membership dues	290.00
June 1, to cash received from Dr. W. F. Donaldson, membership dues	85.00
June 1, to cash received from Dr. F. L. Van Sickle, Executive Secretary	939.55
June 20, to cash received from Dr. W. F. Donaldson, membership dues	95.00
June 30, to cash received from Dr. W. F. Donaldson, membership dues	420.00
July 14, to cash received from Dr. F. L. Van Sickle, Executive Secretary	973.37
July 18, to cash received from Dr. W. F. Donaldson, membership dues	75.00
July 31, to cash received from Dr. W. F. Donaldson, membership dues	37.50
July 31, to cash received from Dr. F. L. Van Sickle, Executive Secretary	897.47
Aug. 14, to cash received from Dr. W. F. Donaldson, membership dues	10.00
Aug. 14, to cash received from Dr. F. L. Van Sickle, Executive Secretary	191.12
Aug. 14, to cash received from Medical defense fund in payment of vouchers drawn against said fund	912.00
Aug. 14, to cash received from Medical benevolence fund in payment of vouchers drawn against said fund	711.12
Total receipts	$92,161.01

EXPENDITURES

Order No.	1922	
1.	Oct. 21, by cash, Miller Bros. & Co., Rent, Harrisburg Office	$70.00
2.	Oct. 21, by cash, Mary S. Blair, Business Mgr., Exec. Secy's Office	150.00
3.	Oct. 21, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
4.	Oct. 21, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
5.	Oct. 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
6.	Oct. 21, by cash, J. B. Lowman, Building & Loan Investment	100.00
7.	Oct. 21, by cash, Mary Hunter, Stenographer to Secretary	97.50
8.	Oct. 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
9.	Oct. 21, by cash, J. B. F. Wyant, Expense as Trustee	40.72
10.	Oct. 21, by cash, W. A. Challener, Medical Defense Fund	75.00
11.	Oct. 21, by cash, Evangelical Press, September Journal—balance	233.58
12.	Oct. 21, by cash, Evangelical Press, Binding three volumes of Penna. Med. Journal	9.97
13.	Oct. 21, by cash, Evangelical Press, Programs for Scranton meeting, and Official Transactions	200.94
14.	Oct. 21, by cash, Grant L. Bell, Auditing Treasurer's Books	30.00
15.	Oct. 21, by cash, F. L. Van Sickle, Expense, Traveling	17.09
16.	Oct. 21, by cash, Louis Weber & Son, Gavel for President	20.50
17.	Oct. 21, by cash, Miller Brothers & Co., Rent, Harrisburg Office	70.00
18.	Oct. 21, by cash, Walter F. Donaldson, Expense, Scranton Meeting	182.10
19.	Oct. 21, by cash, Smith & Howley Co., Electric Wiring, Scranton	130.00
20.	Oct. 21, by cash, American Surety Co. of New York, Premium on bonds of Secretary and Treasurer	50.00
21.	Oct. 21, by cash, Walter F. Donaldson, Cash advanced for Secretaries' Conference	45.00
22.	Oct. 21, by cash, Ida L. Little, Expense, Scranton Meeting	47.45
23.	Oct. 21, by cash, Hyacinth Beard, Expense, Scranton Meeting	41.07
24.	Oct. 21, by cash, Walter F. Donaldson, Expense, Scranton Meeting	46.20
25.	Oct. 21, by cash, Evangelical Press, Printing	10.30
26.	Oct. 21, by cash, Mary S. Blair, Expense, Scranton Meeting	45.47
27.	Oct. 21, by cash, F. L. Van Sickle, Expense, Scranton Meeting	76.14
28.	Oct. 31, by cash, T. B. Appel, Traveling Expense as Delegate, Delaware State Society	8.71
29.	Oct. 31, by cash, H. T. Price, Expense, Scranton Meeting	4.00
30.	Oct. 31, by cash, Clifford G. Grulee, Expense, Scranton Meeting,	85.00
31.	Oct. 31, by cash, Lawrence Litchfield, Traveling Expense as President	7.00
32.	Oct. 31, by cash, C. B. Longenecker, Expense, Scranton Meeting	29.04
33.	Oct. 31, by cash, F. L. Van Sickle, Bonus, Journal Advertising	500.00
34.	Oct. 31, by cash, All Steel Equipment Co., Cupboard, Secretary's Office	48.00
35.	Oct. 31, by cash, William Whitford, Reporting Scranton Meeting	232.04
36.	Oct. 31, by cash, B. S. Oppenheimer, Expense, Scranton Meeting	20.00
37.	Oct. 31, by cash, Sydney R. Miller, Expense, Scranton Meeting	41.80

38. Oct. 31, by cash, W. A. Challener, Medical Defense 200.00
39. Nov. 18, by cash, Scranton Printing Co., Stationery 11.00
40. Nov. 18, by cash, Evangelical Press, October Journal 1,220.05
41. Nov. 18, by cash, Harold R. Mixsell, Expense, Scranton Meeting 14.00
42. Nov. 18, by cash, McCloy & Company, Book Case, Secretary's Office 27.20
43. Nov. 18, by cash, Walter F. Donaldson, Expense, Secretary's Office 32.25
44. Nov. 18, by cash, Mary Hunter, Stenographer to Secretary 70.00
45. Nov. 18, by cash, Jenkins Arcade Co., Rent, Secretary's Office 30.00
46. Nov. 18, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
47. Nov. 18, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
48. Nov. 18, by cash, Hyacinth Beard, Stenographer to Executive Secretary 100.00
49. Nov. 18, by cash, Miller Bros. & Co., Rent, Harrisburg Office 70.00
50. Nov. 18, by cash, J. B. Lowman, Building & Loan Investment 100.00
51. Nov. 18, by cash, Edward B. Heckel, Interest on Benevolence Fund 378.66
52. Nov. 18, by cash, The Progressive Press, Printing Receipt Books 95.00
53. Nov. 18, by cash, F. L. Van Sickle, Expense, Scranton Meeting 1,963.50
54. Dec. 5, by cash, Mrs. M. C. Repp, Reporting, Scranton Meeting 115.00
55. Dec. 5, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
56. Dec. 5, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
57. Dec. 5, by cash, Hyacinth Beard, Stenographer to Executive Secretary 100.00
58. Dec. 5, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
59. Dec. 5, by cash, Mary Hunter, Stenographer to Secretary 70.00
60. Dec. 5, by cash, Walter F. Donaldson, Quarterly Salary as Secretary 450.00
61. Dec. 5, by cash, Ida L. Little, Stenographer to Secretary 90.00
62. Dec. 5, by cash, J. B. Lowman, Quarterly Salary as Treasurer 50.00
63. Dec. 5, by cash, B. J. Myers, Quarterly Salary, Legal Counsel 75.00
64. Dec. 5, by cash, J. B. Lowman, Building & Loan Investment 100.00
65. Dec. 5, by cash, Evangelical Press, Journal for November 1,333.37
66. Dec. 5, by cash, National Printing Co., Printing 70.50
67. Dec. 8, by cash, Walter E. Dandy, Expense, Scranton Meeting 32.32
68. Dec. 23, by cash, W. S. Brenholtz, Expense, Trustee and Councilor 20.83
69. Dec. 23, by cash, J. B. F. Wyant, Expense, Meeting of Board of Trustees 25.74
70. Dec. 23, by cash, National Printing Co., Printing 36.00
71. Dec. 23, by cash, E. S. Joseph, Insurance, Office of the Executive Secretary 9.24
72. Dec. 23, by cash, Jesse L. Lenker, Purchase of permanent quarters, Harrisburg 17,000.00
73. Dec. 23, by cash, Lincoln Trust Co., Reinvestment of Special Funds 19,500.00

1923

74. Jan. 6, by cash, Miller Bros. & Co., Rent, Harrisburg Office 70.00
75. Jan. 6, by cash, H. W. Mitchell, Expense, meeting of Board of Trustees 23.60
76. Jan. 6, by cash, James M. Lingle, Reporting, Scranton Meeting 451.33
77. Jan. 18, by cash, Evangelical Press, Journal for December, ... 1,303.20
78. Jan. 18, by cash, Harris P. Mosher, Expense, Scranton Meeting 46.96
79. Jan. 18, by cash, W. H. Sears, Expense, Scientific Program Committee 38.50
80. Jan. 18, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
81. Jan. 18, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
82. Jan. 18, by cash, Hyacinth Beard, Stenographer to Executive Secretary 100.00
83. Jan. 18, by cash, Miller Bros. & Co., Rent, Harrisburg Office 70.00
84. Jan. 18, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
85. Jan. 18, by cash, J. B. Lowman, Building & Loan Investment 100.00
86. Jan. 18, by cash, Mary Hunter, Stenographer to Secretary 75.00
87. Jan. 18, by cash, F. L. Van Sickle, Petty Cash 300.00
88. Jan. 18, by cash, Lawrence Litchfield, Traveling Expense as President 45.46
89. Jan. 18, by cash, Evangelical Press, Printing 114.81
90. Jan. 18, by cash, William H. Mayer, Expense, Committee on Revision of Constitution and By-Laws 45.82
91. Feb. 9, by cash, Evangelical Press, Journal for January 1,330.81
92. Feb. 9, by cash, Evangelical Press, Printing 5.87
93. Feb. 9, by cash, David Marine, Expense, Scranton Meeting 20.00
94. Feb. 27, by cash, U. S. National Bank, Safe Deposit Box 3.00
95. Feb. 27, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
96. Feb. 27, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
97. Feb. 27, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
98. Feb. 27, by cash, Miller Bros. & Co., Rent, Harrisburg Office 70.00
99. Feb. 27, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
100. Feb. 27, by cash, J. B. Lowman, Building & Loan Investment 100.00
101. Feb. 27, by cash, Mary Hunter, Stenographer to Secretary 75.00
102. Feb. 27, by cash, Theresa Magee, Reporting, Scranton Meeting 150.00
103. Feb. 27, by cash, F. L. Van Sickle, Cash advanced on account of 1923 Session 150.00
104. Feb. 27, by cash, Walter F. Donaldson, Petty Cash, ... 200.00
105. Feb. 27, by cash, Pennsylvania State Chamber of Commerce, Dues 25.00
106. Feb 27, by cash, E. S. Joseph, Insurance, Harrisburg Office 22.50
107. Feb. 27, by cash, Office Equipment Company, Ledger Outfit 10.00
108. Feb. 27, by cash, Benno Jansen, Plans, William Penn Hotel, 1923 Session 36.00
109. Feb. 27, by cash, (Void)
110. Feb. 27, by cash, F. H. Gerlock & Co., Printing, Commission on Cancer 40.60
111. Feb. 27, by cash, Obrana Publishing Co., Printing, Commission on Cancer 14.50
112. Mar. 14, by cash, H. A. Miller, Expense, Scientific Program Committee 27.00
113. Mar. 14, by cash, W. M. Bortz, Expense, Scientific Program Committee 21.09
114. Mar. 14, by cash, Lawrence Litchfield, Expense, Committee on Public Relations 54.37
115. Mar. 14, by cash, Mary S. Blair, Business Mgr., Office Exec. Secy. 150.00
116. Mar. 14, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
117. Mar. 14, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
118. Mar. 14, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
119. Mar. 14, by cash, Mary Hunter, Stenographer to Secretary 75.00
120. Mar. 14, by cash, J. B. Lowman, Building and Loan Investment 100.00
121. Mar. 14, by cash, W. F. Donaldson, Quarterly Salary as Secretry 450.00
122. Mar. 14, by cash, J. B. Lowman, Quarterly Salary as Treasurer 50.00
123. Mar. 14, by cash, Ida L. Little, Quarterly Salary, Stenographer to Secretary 90.00
124. Mar. 14, by cash, B. J. Myers, Quarterly Salary, Legal Counsel 75.00
125. Mar. 14, by cash, Evangelical Press, JOURNAL for February 1,337.68
126. April 2, by cash, Evangelical Press, JOURNAL for March 1,346.71
127. April 2, by cash, Evangelical Press, Printing 4.25
128. April 2, by cash, Grant L. Bell, Developing and installing new Accounting System 600.00
129. April 2, by cash, W. A. Challener, Medical Defense 100.00
130. April 2, by cash, F. L. Van Sickle, Remodeling permanent quarters 3,000.00
131. April 2, by cash, J. B. Knapp, Flowers for Dr. Stevens 20.00
132. April 2, by cash, American Surety Co., Premium on bond of Executive Secretary 6.25
133. April 21, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
134. April 21, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
135. April 21, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
136. April 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
137. April 21, by cash, Mary Hunter, Stenographer to Secretary 75.00
138. April 21, by cash, Office Service Co., Multigraphing, Committee on Public Relations .. 18.05
139. April 21, by cash, S. R. Haythorn, Expense, Committee on Public Relations 43.75
140. April 21, by cash, J. B. Lowman, Building and Loan Investment 100.00
141. April 21, by cash, Walter F. Donaldson, Expense, Board of Trustees Meeting 10.50
142. April 21, by cash, National Printing Co., Printing 19.50
143. April 21, by cash, H. F. Oves, City Tax on Permanent Quarters 135.13
144. May 10, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00

145. May 10, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
146. May 10, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
147. May 10, by cash, Mary Hunter, Stenographer to Secretary 75.00
148. May 10, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
149. May 10, by cash, F. L. Van Sickle, Rent, Permanent Quarters 150.00
150. May 10, by cash, National Printing Co., Printing 8.00
151. May 10, by cash, J. B. Lowman, Building and Loan Investment 100.00
152. May 10, by cash, W. F. Donaldson, Expense, Meeting of Board of Trustees 4.00
153. May 10, by cash, Evangelical Press, JOURNAL for April 1,368.28
154. May 10, by cash, F. L. Van Sickle, Petty Cash 300.00
155. May 10, by cash, Lawrence Litchfield, Traveling Expense as President 84.72
156. May 25, by cash, H. J. Benz, Expense, Committee on Public Relations 9.43
157. May 25, by cash, E. S. Joseph, Insurance, permanent quarters 22.48
158. May 25, by cash, H. W. Mitchell, Expense, Meeting of Board of Trustees 27.34
159. May 25, by cash, Harnics & Salisbury, Workmen's Compensation 10.00
160. June 1, by cash, W. A. McConnell, Medical Defense 50.00
161. June 1, by cash, Dives, Pomeroy & Stewart, Expense, Permanent Quarters 246.43
162. June 1, by cash, Harrisburg Hardware Co., Expense, Permanent Quarters 25.50
163. June 1, by cash, Office Equipment Co., Expense, Permanent Quarters 20.35
164. June 7, by cash, Evangelical Press, JOURNAL for May 1,406.45
165. June 7, by cash, P. A. Wilbert, Medical Defense 87.00
166. June 8, by cash, Evangelical Press, Printing .. 36.75
167. June 8, by cash, Evangelical Press, Printing .. 22.85
168. June 8, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
169. June 8, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
170. June 8, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
171. June 8, by cash, F. L. Van Sickle, Rent, Permanent Quarters 75.00
172. June 8, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
173. June 8, by cash, Mary Hunter, Stenographer to Secretary 75.00
174. June 8, by cash, Walter F. Donaldson, Quarterly salary as Secretary 450.00
175. June 8, by cash, Ida L. Little, Quarterly salary, Stenographer to Secretary 90.00
176. June 8, by cash, J. B. Lowman, Quarterly salary as Treasurer 50.00
177. June 8, by cash, J. B. Lowman, Building and Loan Investment 100.00
178. June 8, by cash, B J. Myers, Quarterly salary, Legal Counsel 75.00
179. June 18, by cash, Burns & Company, Arm Chair, office of Executive Secretary 19.00
180. June 18, by cash, Bowman & Company, Water Cooler, office of Executive Secretary 22.50
181. June 18, by cash, Adam J. Simpson, Expense, Scientific Program Committee 26.00
182. June 18, by cash, E. B. Heckel, Interest on Medical Benevolence Fund 332.46
183. June 18, by cash, W. A. Challener, Medical Defense Fund 150.00
184. July 14, by cash, Evangelical Press, JOURNAL for June 1,401.17
185. July 14, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
186. July 14, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
187. July 14, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
188. July 14, by cash, F. L. Van Sickle, Rent, Permanent Quarters 75.00
189. July 14, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
190. July 14, by cash, Mary Hunter, Stenographer to Secretary 80.00
191. July 14, by cash, J. B. Lowman, Building and Loan Investment 100.00
192. July 31, by cash, Evangelical Press, JOURNAL for July 1,389.42
193. Aug. 13, by cash, T. B. Rockafellar, County Tax, permanent quarters 59.85
194. Aug. 13, by cash, H. F. Oves, School Tax, permanent quarters 178.50
195. Aug. 13, by cash, Duling & Co., Awnings, permanent quarters 74.00
196. Aug 13, by cash, John F. Twig, Carpenter Work, permanent quarters 47.81
197. Aug. 13, by cash, Ross O'Brine, Plumbing, permanent quarters 86.36
198. Aug. 13, by cash, Harrisburg Light & Power Co., Steam Service, permanent quarters 220.00
199. Aug. 13, by cash, Robbins Manufacturing Co., Screens, permanent quarters 190.00
200. Aug. 13, by cash, American Medical Association, 1923 Medical Directory 12.00
201. Aug. 13, by cash, National Printing Co., Printing 8.25
202. Aug. 13, by cash, John A. Coyle, Medical Defense Fund, ... 250.00
203. Aug. 13, by cash, Charles Falkowsky, Expense, Scientific Program Committee 19.64
204. Aug. 13, by cash, T. G. Simonton, Expense, Scientific Program Committee 52.00
205. Aug. 13, by cash, Evangelical Press, Printing, Committee on Public Relations 25.80
206. Aug. 13, by cash, F. G. Fahnestock, Jr., Architectural Service, Permanent Quarters 65.00
207. Aug 13, by cash, Ira G. Shoemaker, Expense, Trustee and Councilor 42.64
208. Aug. 13, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
209. Aug. 13, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
210. Aug 13, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
211. Aug. 13, by cash, J. B. Lowman, Building and Loan Investment 100.00
212. Aug. 13, by cash, E. A. Shumway, Treasurer, Refund to Phila. Co. Society a|c Medical Defense 493.75
213. Aug. 13, by cash, F. L. Van Sickle, Rent, permanent quarters 75.00
214. Aug. 13, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office 30.00
215. Aug. 13, by cash, Mary Hunter, Stenographer to Secretary 80.00
216. Aug. 13, by cash, F. H. Gerlock Co., Printing, Commission on Cancer 40.00
217. Aug. 13, by cash, I. J. Moyer, Expense, Trustee and Councilor 65.81
218. Aug. 13, by cash, L. Weber & Son, Gavel for retiring President 20.85
219. Aug. 17, by cash, F. L. Van Sickle, Salary as Executive Secretary 375.00
220. Aug. 17, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary 150.00
221. Aug. 17, by cash, Hyacinth Beard, Stenographer to Executive Secretary 110.00
222. Aug. 17, by cash, F. L. Van Sickle, Agent, Rent for office, September 75.00
223. Aug. 17, by cash, J. B. Lowman, Building and Loan Investment, September 100.00
224. Aug. 17, by cash, Mary Hunter, Stenographer to Secretary 80.00
225. Aug. 17, by cash, B. J. Myers, Quarterly salary, Legal Counsel 75.00
226. Aug. 17, by cash, J. B. Lowman, Quarterly Salary as Treasurer 50.00
227. Aug. 17, by cash, Ida L. Little, Stenographer to Secretary 75.00
228. Aug. 17, by cash, W. F. Donaldson, Quarterly salary, Secretary 450.00
229. Aug 17, by cash, The Evangelical Press, JOURNAL for August 1,313.37
230. Aug. 17, by cash, The Evangelical Press, Estimated cost of JOURNAL for September 1,350.00
231. Aug. 17, by cash, The Evangelical Press, Printing membership list for 1923 ..... 275.00
232. Aug. 17, by cash, J. B. Lowman, Treasurer, Adjustment of error in computing allotments from 1921 per capita tax collected in 1922 ..... 3.15
233. Aug. 17, by cash, J. B. Lowman, Treasurer, Per capita allotment to Medical Defense Fund, August 17, 1922, to February 1, 1923 1,063.87
234. Aug. 17, by cash, J. B. Lowman, Treasurer Per capita allotment to Medical Benevolence Fund, August 17, 1922, to February 1, 1923 212.78

Total Expenditures, General Fund $82,307.08

NOTE: Subsequent to February 1, 1923, allotments to the Medical Defense Fund and Medical Benevolence Fund were withheld from the General Fund and carried in these accounts respectively.

CLASSIFIED STATEMENT OF RECEIPTS

September 1, 1922, to September 1, 1923

GENERAL FUND

Cash on hand September 1, 1922		$21,602.77
Received allotments from membership per capita tax	$30,106.30	
Received from Executive Secretary and Editor	12,661.54	
Transferred from special funds for reinvestment	19,500.00	
Received difference between amount transferred and amount invested	58.58	
Received from special funds in payment of vouchers drawn against said funds	1,623.12	63,949.54
Total		$85,552.31

MEDICAL DEFENSE FUND

Cash on hand September 1, 1922		$18,140.03
Received interest on investments	$618.75	
Received interest on deposits	326.89	
Received allotments from membership per capita tax	5,507.25	6,452.89
Total		$24,592.92

MEDICAL BENEVOLENCE FUND

Cash on hand September 1, 1922		$4,124.22
Received interest on investments	$510.38	
Received interest on deposits	80.97	
Received allotments from membership per capita tax	1,101.45	1,692.80
Total		$5,817.02

ENDOWMENT FUND

Cash on hand September 1, 1922		$1,010.43
Received interest on investments	$340.00	
Received interest on deposits	22.16	362.16
Total		$1,372.59
Total Receipts		$117,334.84

CLASSIFIED STATEMENT OF EXPENDITURES

September 1, 1922, to September 1, 1923

GENERAL FUND

Purchase and improvement of permanent headquarters	$21,394.91
Endowment Fund for investment	1,200.00
JOURNAL for year	16,334.09
Salaries:	
Executive Secretary and Editor	4,500.00
Secretary	1,800.00
Treasurer	200.00
Legal Counsel	300.00
Assistants, Executive Secy's Office	3,080.00
Stenographers, Secretary's Office	1,272.50
Expense, Secretary's office, for rent, equipment, printing, etc.	667.45
Expense, Exec. Secy's office, for rent, equipment, etc.	2,197.83
Expense, Gavels for Presidents	41.35
Expense, Premiums on bonds of Exec. Secy., Secretary and Treasurer	56.25
Expense, Annual meeting, 1922	4,030.36
Expense, Annual meeting, 1923	36.00
Expense, Printing and stationery	717.05
Expense, Rental safe deposit box, Treas.	3.00
Expense, Annual dues to Penna. Chamber of Commerce	25.00
Expense, President's traveling expense	137.18
Expense, Committees, Councilors and Trustees traveling expense	745.44
Expense, Auditing books of Treasurer	30.00
Expense, Installing new accounting system	600.00
Expense, State Workmen's Compensation Insurance	10.00
Expense, American Medical Directory	12.00
Expense, Flowers for Dr. C. L. Stevens	20.00
Reinvestment of special funds	19,500.00
Current expenditures of special funds	1,623.12
Per Capita tax allotment to special funds	1,279.80
Refund on medical defense allotment	493.75
Total	$82,307.08

SPECIAL FUNDS

Expended for reinvestment as follows:		
Medical Defense Fund,		
Purchased American T. & T. bonds, 5%, due 1946, interest payable June 1st and December 1st, Par	$10,000.00	
Purchased Liberty Bonds, 4¼%, Par	5,000.00	
Medical Benevolence Fund,		
Purchased Liberty Bonds, 4¼%, Par	3,500.00	
Endowment Fund,		
Purchased Liberty Bonds, 4¼%, Par	1,000.00	
Current expenditures of special funds reimbursing general fund	1,623.12	
Total		$21,123.12
Total Disbursements		$103,430.20

STATEMENT OF CASH BALANCES AND INVESTMENTS

September 1, 1923

CASH

General Fund	$3,245.23	
Medical Defense Fund	8,680.92	
Medical Benevolence Fund	1,605.90	
Endowment Fund	372.59	
		$13,904.64

MEDICAL DEFENSE FUND

Wilkes-Barre City Improvement Bonds, Nos. 96, 97, 98, series 1, 4½%, par value $1,000.00	$3,000.00	
American Telephone & Telegraph, 1946 series, 5%, par value	10,000.00	
Liberty Bonds	8,000.00	
		21,000.00

MEDICAL BENEVOLENCE FUND

Wilkes-Barre City Improvement Bond No. 94, series 1, 4½%, par value	$1,000.00	
Liberty Bonds	12,700.00	
		13,700.00

ENDOWMENT FUND

100 shares Peoples' Building and Loan Association stock, 81 installments	$8,100.00	
Liberty Bonds	6,000.00	
		14,100.00

REAL ESTATE

Invested in permanent quarters, Harrisburg	$17,000.00	
Cost of repairs and improvements to building	4,394.91	
		21,394.91
Total Cash Balances and Investments, Sept. 1, 1923		$84,099.55

SUMMARY STATEMENT OF CASH BALANCES, RECEIPTS AND EXPENDITURES

September 1, 1922, to September 1, 1923

	Total	General Fund	Medical Defense Fund	Medical Benevolence Fund	Endowment Fund
Cash balance, Sept. 1, 1922	$44,877.45	$21,602.77	$18,140.03	$4,124.22	$1,010.43
Receipts:					
Membership per capita tax	$36,715.00	$30,106.30	$5,507.25	$1,101.45	.....
Account of Executive Secretary and Editor	12,661.54	12,661.54	.....	.....	.....
Interest on investments and deposits	1,899.15	.....	945.64	591.35	362.16
Difference between amount transferred for investment and amount expended	58.58	58.58	.....	.....	.....
Total receipts, Sept. 1, 1922, to Sept. 1, 1923	$51,334.27	$42,826.42	$6,452.89	$1,692.80	$362.16
Total receipts, including balances Sept. 1, 1922	96,211.72	64,429.19	24,592.92	5,817.02	1,372.59
Transfers of Funds	.....	21,123.12	15,912.00	4,211.12	1,000.00
Total balances and receipts	$96,211.72	$85,552.31	$8,680.92	$1,605.90	$372.59
Expenditures, Sept. 1, 1922, to Sept. 1, 1923	82,307.08	82,307.08	.....	.....	.....
Balances, Sept. 1, 1923	$13,904.64	$3,245.23	$8,680.92	$1,605.90	$372.59

*Transferred from.
**Transferred to

Respectfully submitted,
J. B. LOWMAN, *Treasurer.*

REPORT OF THE CHAIRMAN OF THE BOARD OF TRUSTEES

To the President and the House of Delegates:

The Board of Trustees reorganized on October 4, 1922, by electing the undersigned Chairman, and Dr. Donald Guthrie Clerk for the ensuing year.

The various committees of the Board were appointed with a request that each committee should select its own officers.

Committee on Finance: Dr. Albertson, Chairman, Drs. Guthrie and Brenholtz.

Committee on Publication of JOURNAL: Dr. Shoemaker, Chairman, Drs. Appel and Hammond.

Committee on Conduct of Executive Secretary's Office: Dr. Mitchell, Chairman, Drs. Moyer and Quigley.

The reports of the Secretary, Dr. Donaldson; of the Executive Secretary, Dr. Van Sickle; and of the Chairman of the Committee on Public Health Legislation, Dr. Knowles, were received and considered. The auditor's report of the last year was accepted and filed. The Finance Committee presented the budget for the ensuing year. This was discussed and adopted.

At the regular stated meeting, December 5, 1922, the members of the Board of Trustees each gave a report of the counties comprising their various districts.

The Board approved the list of securities selected by the Finance Committee and Treasurer of the Society for the investment of money from the Medical Defense, Medical Benevolence and Endowment Funds. The reports of the Secretary and Executive Secretary were received, considered and adopted.

It was concluded from discussion that the combination of the Journal of the Medical Society of the State of Pennsylvania with that of the Medical Society of Delaware would result in a greater and a wider field of usefulness. The JOURNAL Committee, through Dr. Appel, reported that the committee was at work and would report finally at the February meeting.

On account of rents advancing and desirable locations being hard to secure, the Board authorized the Finance Committee to option property for permanent quarters for the State Society in Harrisburg.

A regular stated meeting of the Board was held February 6, 1923. The reports of the Secretary, Executive Secretary, and the Trustees of the various districts were received and approved.

The report of the Committee on Permanent Quarters resulted in the approval by the Board of the purchase of an improved property at 230 State St., Harrisburg, at an attractive figure.

Action on the final report of the Journal Committee resulted in the consolidation of the *Pennsylvania Medical Journal* with the *Delaware State Medical Journal*. The first issue of the consolidated journal, the ATLANTIC MEDICAL JOURNAL, appeared in April, 1923.

The Committee on Public Health Legislation reported on their work in the 1923 Legislature.

The Committee on Conduct of the Executive Secretary's Office was instructed to assume responsibility for the upkeep of the Society's improved property, as well as renting certain portions of the same.

The Finance Committee reported the purchase of bonds and securities for the Medical Defense, Medical Benevolence and Endowment Funds.

There was a regularly stated meeting of the Board May 1, 1922. The reports of the Secretary, Executive Secretary, standing committees and Councilors were received.

A new accounting system was installed in the various offices of the Society. Action was taken looking to improvement in our representation annually in the House of Delegates of the American Medical Association.

Your Board of Officers would suggest that the members of the House of Delegates act as missionaries in the various fields from whence they come and build up the county medical societies. Let the slogan be "Every Eligible Physician a Member." We must all be willing to make every effort to maintain high standards in the practice of our chosen profession.

JAY B. F. WYANT, *Chairman.*

REPORTS OF INDIVIDUAL COUNCILORS

DR. FRANK C. HAMMOND, PHILADELPHIA, COUNCILOR FOR THE FIRST DISTRICT

To the President and the House of Delegates:

An Executive Office was opened by the Philadelphia County Medical Society on January 1, 1923, Franklin M. Crispin being appointed Executive Secretary. At this office the detail of all routine business of the Society is conducted. The Executive Secretary acts as Clerk of the Board of Directors and attends all committee meetings where his presence is required. By a centralization of the work of the Society through this office, it is found that its affairs, including the committee work, function better and more expeditiously; that the machinery is always ready to handle any new or larger activities which the Society may decide to conduct; and that the officers and committeemen are relieved of much of the irksome detail with which they have heretofore necessarily been burdened. Thus busy physicians are enabled to accept active appointments in the Society, knowing that notices of meetings, records, and other detail will be cared for through the Executive Office.

All this is being accomplished at practically the same cost to the Society as heretofore. There necessarily will be a gradually increasing cost due to the increasing and larger activities which the Society is thus enabled to conduct.

The Medical Defense Committee has been functioning actively, and all cases have been successfully defended.

Splendid programs have been arranged for the scientific meetings, which have been fairly well attended. The committees at large have been functioning as usual. Among new committees to be appointed are:

Committee on Diphtheria Prevention. This committee is working in conjunction with the Board of Health and has been very active. It conducted an active campaign during Diphtheria Prevention Week and it has had a number of recent meetings at the office of the Director of Public Health where plans for the fall have been promulgated. A Committee on Health Examinations has been appointed to confer as to the advisability of requesting patients to report at stated intervals for examination, with a view to the prevention of disease. A Committee on Radio Broadcasting was appointed to make radio health talks to the public. Several talks were given and this practice will be continued in the fall. A Committee on the Seventy-fifth Anniversary has been appointed. No specific plans have been announced by this committee, except that it has secured the Ball Room of the Bellevue for January 16, 1924, the date of the anniversary. Announcements will be made in the early fall. A Committee on Sesqui-Centennial has been appointed to act in conjunction with the Executive Committee of the Sesqui-Centennial in supervising medical exhibits, etc., if deemed advisable. A Committee on The Nursing Problem reported at a recent meeting of the Society. The report was of an extremely constructive nature and this work will be carried on in the fall along the lines of its recommendations. The Workmen's Compensation Committee has been extremely active. A strenuous attempt was made to have passed through the Pennsylvania Legislature, a Workmen's Compensation Bill acceptable to physicians. A monster petition, signed by about fifteen hundred of the members of the Philadelphia County Medical Society was prepared and presented to the Legislature. Letters have been sent to the Philadelphia Assemblymen and the active coöperation of the other county societies of the state has been solicited. While such a bill was not passed to date, due to the large corporation interests in all probability, still no adverse legislation has been passed. It has placed the Philadelphia County Medical Society and all the county societies decidedly on record and will unquestionably affect any future legislation which may be passed.

A gift of $2,000 was received from Doctor J. M. Anders, Chairman of the Library Committee, the interest of which will be equally divided between the Northeast and Northwest Branches for library purposes. A gift of $5,000 (held in trust) was made by Dr. Isadore P. Strittmatter, the income of which is to be used annually for awarding a gold medal to any doctor presenting to the Philadelphia County Medical Society the most valuable contribution to the healing art. There are other stipulations mentioned.

A system of compiling biographical records of the members of the Philadelphia County Medical Society, past and present, is being established.

There has been much activity in regard to the purchase of a home for the Society. The retiring President, Dr. J. Norman Henry, urged such a purchase in his address before the Society last January. Dr. John W. West, Chairman of the Committee on Home of the Society; Dr. John F. Roderer, Chairman of the Committee on Executive Office, and the Board of Trustees have been active exponents of such a purchase. A special meeting of the Society was called recently to secure the sentiment of the members towards the project. Finally, the Board of Directors, at a meeting held July 11th, authorized the purchase of a building at 1916-1918 Race Street, adjoining the Academy of Natural Sciences and fronting on Parkway. An offer has been made for the property but the sale is not yet consummated nor will it be known for several weeks whether the offer will be accepted.

DR. HARRY W. ALBERTSON, SCRANTON, COUNCILOR FOR THE SECOND DISTRICT

To the President and House of Delegates:

The year just ended in the Second Councilor District has been one of the most successful in the history of organized medicine in the counties comprising the district.

Of the eight counties in this district, four have increased their membership, two have the same membership as last year, and two have fallen below by but one member each. This, we feel, is the result of the activities of the local officers of each of the several component county societies, and is a very commendable showing of interest. I have kept in touch with the work carried on in each county, and find everywhere a yearly increase in interest in scientific medicine, in public health measures and in legislation.

During the past year the Lackawanna County Medical Society has conducted a postgraduate course among its members, the lecturers being furnished by the Postgraduate School of the University of Pennsylvania. Clinics and demonstrations were held weekly in hospitals and dispensaries in Scranton, and lectures were conducted in the rooms of the Medical Society in the evening. At the close of the term a selected number of the class demonstrated and reviewed the work gone over during the course at a general meeting of the Society. A live interest in this work was manifested by the unusually good attendance at both clinics and lectures, and already plans are under way for more advanced work for next year.

Several other counties in this district have plans under way for similar courses of study in postgraduate extension work, and lectures will be held during the coming winter.

The campaign to combat diphtheria in this state, as instituted by the Committee on Public Relations, was well received. In each county, meetings were held by the respective societies dealing with the newer phases of the prevention and treatment of diphtheria, and in several, public meetings were held and speakers provided who brought the advances in preventive medicine forcefully to the attention of the laity.

We feel that this is a step in the right direction, and that in the future other matters which concern public health should be taken up in a state-wide campaign and the public informed of the attitude of the organized medical profession and what it is doing to safeguard the health of the state.

Never, to my knowledge, has a more lively interest been shown by the profession generally in the enactment of the public health measures than that shown during the session of the Legislature of the past winter. At all the meetings of the societies comprising this district, questions were asked and a live interest displayed in things of a legislative nature, and at all times there was a willingness on the part of the membership to assist both financially and by personal effort in the enactment of laws which would more efficiently guard the health of the public.

There are in this district two cases of alleged malpractice, in which suits have been brought against members to recover damages; but after careful investigation, I feel that neither of these cases has any merit in fact, and I am equally as certain that neither case will ever come to trial.

We wish to take this opportunity to congratulate the officers of the component county societies comprising this district for their activities shown during the past year, and the membership at large for the hearty coöperation and support given to the various activities of the Medical Society of the State of Pennsylvania.

DR. IRA G. SHOEMAKER, READING, COUNCILOR FOR THE THIRD DISTRICT

To the President and the House of Delegates:

Owing to certain conditions over which we had no control, we were not able to make our usual visitations to the societies in our district, but have been in touch with them and are pleased to report that conditions throughout the field are favorable. There has been practically no loss in membership and no application for assistance for alleged malpractice suits. The attendance at the monthly meetings has been up to the average. Schuylkill County has inaugurated a postgraduate course and reports splendid results.

DR. THEODORE B. APPEL, LANCASTER, COUNCILOR FOR THE FOURTH DISTRICT

To the President and House of Delegates:

The membership of the several county societies of the Fourth Councilor District shows a net loss of seventeen for the year ending July 1st. Adams County loses two; Cumberland, five; Franklin, two; Lancaster, six; and York, eight, while Dauphin gains four and Lebanon, one. As far as can be ascertained, the proportion of eligible men who are not members of societies is extremely small. An unusually large proportion of the loss in membership is due to death of older men who had been conducting rural practices and whose places have not been filled by new men. In many counties there is a continuous demand for young graduates to settle in the country sections, and with each year there seems to be increasing difficulty to secure men who will be willing to take up these practices. Bad roads and distance from hospitals and from larger towns are the excuses given. It is apparent that some organized effort should be made by the profession to provide some means by which small rural communities would be assured of proper medical service.

The several societies show satisfactory activity in their response to an appeal made by the Legislative Bureau during the session of the Legislature.

Medical Defense Case No. 143, brought as a claim for damages on account of vicious union of a fractured leg in the patient with a four plus Wassermann, came to trial at the spring term of court. There had been numerous offers of settlement from the attorney of

the plaintiff, which were refused. He finally offered to accept a non-suit. This was also refused on the ground that the case might in the future be reopened, and the plaintiff was forced to trial. When he came before the court he was compelled to admit that he had no evidence and the court with a reprimand ordered a verdict of "Not guilty." The other medical defense cases in this district show no evidence of immediate progress.

DR. JOHN M. QUIGLEY, CLEARFIELD, COUNCILOR FOR THE FIFTH DISTRICT

To the President and House of Delegates:

Herewith is submitted the annual report of the Fifth Councilor District:

On April 30th, I called together the members of the Perry County Medical Society, which had ceased to function, and after having given them a talk on the need of having a live and working organization in their county, reorganized their society and held an election of officers, since which time they have been making an effort to hold regular monthly meetings instead of quarterly as before, with I believe, some success.

I visit the Clearfield County Medical Society monthly. This society is flourishing and full of activity.

On July 5th, I visited the Mifflin County Medical Society, which I found in good condition, took dinner with them and then resumed my journey to Mifflintown where I attended the quarterly meeting of that society. They are a small society but the spirit of the society seems good.

On July 11th, I visited the meeting of the Center County Medical Society and while the attendance was small, yet the spirit of the meeting was interesting. Their worst trouble is lack of interest in attendance at the meetings which are held monthly.

On August 9th, I attended a meeting of the Cambria County Medical Society which was held at Spangler with the largest attendance I have yet found except at some of the meetings of the Clearfield County Medical Society. We had dinner before the meeting, to which the ladies were invited. The papers presented were spicy and up to the minute and the discussion was general and very interesting. This society, the largest in the district, has increased its membership by five this year and is in a most flourishing condition.

This leaves but two societies in my district which I have not as yet visited, but I hope to visit these two, Huntingdon and Blair, both of which are in excellent condition, before the meeting of the State Society.

The whole district is therefore in a normal condition and interest and membership is on the increase.

We have had three deaths in the district during the year; one in each of the counties of Blair, Clearfield and Perry.

We have not held Censorial District meetings this year but the annual joint meeting of the county societies of central Pennsylvania will be held as usual at Tyrone in September, to which twelve county societies will be invited, and if history repeats itself, there will be an attendance of about two hundred and fifty physicians. This district looks forward to this meeting as the big event of the year in medical circles. It has been held regularly for ten years and has made for a larger acquaintance and a more profound fellowship among the medical men of the district and has promoted a greater and still greater interest in scientific medicine among the men of the district than any other one factor in our history.

There are no suits for alleged malpractice under way in this district at present and there have been none so far this year. One of the members of Cambria County was threatened last October but we have heard nothing of it since, and during the present month a member of Cambria County has been threatened but to date suit has not been instituted.

There are about sixty nonmembers in the district, among whom are a number of homeopaths who do not care to join. This indicates however the need of some activity on the part of the membership committees.

I have urged all the societies to carry out the campaign for diphtheria prevention but the response in Mifflin, Juniata and Perry Counties has so far been nil. In Center, Blair and Huntingdon Counties meetings have been held but I am unable to report the number of immunizations completed. In Clearfield County nothing has been done yet but plans are under way to begin the work as soon as school opens. In Cambria County a great work has been done, we are happy to report, and will continue. They have immunized between 15,000 and 16,000 school children and they expect to continue until every school child in the county shall have been immunized. The Secretary says, "The work will go on next school term and we hope to double this figure and we are now planning to immunize the pre-school age children."

This is a most laudable work and I am proud to represent a county society which stands in the front rank, as does this one, in such a splendid endeavor for the eradication of so dread a disease.

DR. IRWIN J. MOYER, PITTSBURGH, COUNCILOR FOR THE SIXTH DISTRICT

To the President and House of Delegates:

The Councilor of the Sixth District respectfully wishes to submit the following report for the year 1923:

Our members in the Sixth District are anxious to do all that is best for the public health.

A very enjoyable evening was spent with the Greene County Medical Society at Waynesburg, February 13, 1923. There was a good attendance and general discussion of important topics.

A good meeting of the Westmoreland County Medical Society was enjoyed by the Councilor at Greensburg, the evening of March 6, 1923. Active general discussion of timely topics made the occasion very interesting.

The Second Annual Clinic of the Westmoreland County Medical Society at the Westmoreland Hospital, Greensburg, in April, 1923, was a splendid affair. It was attended by about two hundred and seventy-five physicians from many towns of Western Pennsylvania. The clinic was in charge of Doctor Thomas McCrea, Professor of Medicine, Jefferson Medical College, and Doctor W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia.

The March, 1923, meeting of the Washington County Medical Society in their new meeting place, the George Washington Hotel, was well attended. A Symposium on Communicable Diseases by Doctors Hazlett, Sargent and Martin was well presented. After this followed a discussion of the importance of having public coöperation in the isolation and quarantine of communicable diseases; in vaccination; and in the rational scientific control of animal experimentation.

At the June 7, 1923, meeting of the Fayette County Medical Society, held at Uniontown, the Councilor urged the necessity for continued efforts by the county

medical societies to interest the public, by all possible judicious methods, in approved sickness prevention measures. The importance of working through and with public welfare, church and civic organizations was especially advocated.

Within the year, up to August 1, 1923, seven suits for alleged malpractice have been filed in the Sixth District. Detailed reports of these are made by the Secretary.

In July the Secretary has receipted for 1,673 members in the Sixth District.

DR. HARRY W. MITCHELL, WARREN, COUNCILOR FOR THE SEVENTH DISTRICT

To the President and House of Delegates:

Numerous visits have been made to the various county societies during the past year and an effort has been made to keep the county medical society officers in touch with matters pertaining to the business of the medical society during the last session of the Legislature. The county societies are all actively organized and holding their well-attended meetings at stated intervals.

DR. DONALD GUTHRIE, SAYRE, COUNCILOR FOR THE EIGHTH DISTRICT

To the President and House of Delegates:

The condition of the societies in the Seventeenth and Eighteenth Censorial Districts during the past year has been extremely good. Your Councilor has been in correspondence with most of the secretaries and has visited all the counties in the district. There have been no suits entered or threatened for alleged malpractice, and no internal dissension of any kind as far as I can tell. The prospect for increased membership for the coming year seems very good.

I wish to report with a great deal of satisfaction the work of the Postgraduate Extension Group for Bradford County.

At its January meeting the Bradford County Medical Society acted favorably upon the invitation extended by the University of Pennsylvania, and proceeded to organize a Postgraduate Extension Group. The general response on the part of the members of the County Society was good, and in April the work was actually started with a class membership of twenty-eight. Many of these doctors came from distances of from twenty to forty-five miles.

Up to the present date (August, 1923), fourteen of the twenty-five weekly meetings have been completed. They have all been held at the Robert Packer Hospital, Sayre.

In looking back over the completed portion of the work, the following general conclusions can be drawn:

1. A high degree of satisfaction and enthusiasm on the part of the attending doctors.
2. A notably good attendance record.
3. A very sincere and effective effort on the part of the University faculty to make their teaching practical and valuable to the members of the course.

In reviewing the experiences at Sayre it is reasonable to state that every county society in the State of Pennsylvania should make a very definite effort to participate in this work, inaugurated by the University of Pennsylvania, and so ably carried out under the direction of Dean Meeker of the Graduate School of Medicine.

DR. JAY B. F. WYANT, KITTANNING, COUNCILOR FOR THE NINTH DISTRICT

To the President and House of Delegates:

The societies making up the Ninth District are in very good condition and usually hold meetings on scheduled time. Most of the societies have been visited during the year and the Councilor is pleased to state that splendid programs were carried out during Diphtheria Prevention Week. If the suggestions and instructions are carried out by the laity as given by the speakers much good will come.

Many of the counties have their usual good standing in membership, yet some physicians are not in the fold. Armstrong County, as has been her standing for some years, has one hundred per cent membership. It is earnestly hoped that this will become contagious and that all the societies throughout the state will have enrolled as members every eligible physician within their bounds. A little missionary work on the part of the members will soon bring this about.

Application for defense in alleged malpractice suits has been requested by two members, one from Jefferson County and one from Armstrong County.

Chiropractors and Osteopaths are coming and going. They have their following for a time and then these followers scatter back to consult practitioners of the old schools.

DR. WALTER S. BRENHOLTZ, WILLIAMSPORT, COUNCILOR FOR THE TENTH DISTRICT

To the President and House of Delegates:

The Councilor for the Tenth District presents his annual report for the year just closing with much pleasure, but with some misgiving.

It has been impossible to visit all of the societies, but all those visited had well attended meetings and showed that they are active medical organizations. The membership of the district has decreased by four since 1922, two of the societies showing a gain, three showing a loss and the other two societies maintaining the same membership as in 1922.

Two of the societies have not been visited as it has been impossible for the councilor to get replies from the secretaries to his letters, but it is hoped that it will be possible to visit these two societies before the annual meeting of the State Society.

All of the societies but one hold regular meetings, Union County Society, which meets only once or twice a year. At the annual meeting of this society in July, it was decided that in the future they would hold their annual meeting in January.

August 24th there will be a meeting in Williamsport under the auspices of the West Branch Medical Association to which all the members of the county societies in the Tenth District will be invited and urged to attend.

There have been no suits for alleged malpractice instituted in the Tenth District during the year, and no internal disturbances which required attention.

Because of the fact that changes were made in the make-up of the Eighth and Tenth Councilor Districts this year, everything has not worked out as well as might have been expected, but on the whole we feel that there is a closer relationship in the ranks of the medical men in the Tenth District than there was formerly, and more of the members interesting themselves in medical affairs.

REPORT OF DELEGATES TO THE 1923 SESSION OF THE AMERICAN MEDICAL ASSOCIATION

To the President and the House of Delegates:

Pursuant to the May 1, 1923, recommendations of the Board of Trustees, the Pennsylvania delegation to the 1923 House of Delegates of the American Medical Association met and organized prior to its attendance upon the first meeting in San Francisco, June 25th. Two meetings held were attended by six of our duly elected or appointed delegates, and the recorded actions of said meetings were later concurred in by the balance of our delegation.

After electing officers we discussed in detail the published recommendations contained in the reports of the various officers and committees of the American Medical Association.

We voted unanimously to favor the interim appointment or election of delegates from constituent state societies to replace previously chosen delegates finding it impossible to serve. We voted favorably on the institution of every possible form of help by the association to its constituent state societies in the development of Postgraduate Work among their members. We opposed the proposed changes in the Constitution and By-Laws affecting the present composition of the House of Delegates. We opposed the request of the Veterans' Bureau that they be granted representation in the House of Delegates. We approved the five-year term for members of the Board of Trustees. We approved making the President, President-Elect and Speaker of the House of Delegates, ex-officio members of the Board of Trustees. We approved of mailing the bulletins of the American Medical Association to all members of the Association. We voted as a unit in the election for President-Elect, Speaker of the House of Delegates and the choice of place for holding 1924 Session.

Our delegation had representatives on two reference committees of the House of Delegates and one of our members was Chairman of a special committee. Our entire delegation concurred with the recommendation of the Board of Trustees of the Medical Society of the State of Pennsylvania in its recommendation to our own House of Delegates that delegates chosen from our own society to the American Medical Association should be "representative members, qualified by medical organization experience to serve promptly, efficiently and continuously," and the further recommendation that our delegates should meet before the session of the American Medical Association to "formulate policies and recommendations for their guidance based on experience and suggestions from the officers and standing committees of our own Society." Our delegation did not concur with the recommendation of the Board to the effect that "the railroad and Pullman fare of the delegates from our Society to the American Medical Association should be paid by the Society."

As evidence that many are chosen who do not later serve, we call your attention to the personnel of the 1923 delegation from our Society to the House of Delegates of the American Medical Association: Charles C. Cracraft, Washington County, elected delegate for 1922 and 1923; Walter F. Donaldson, elected delegate for 1923 and 1924; William H. Mayer, Allegheny County, elected alternate designate for 1922 and 1923; Frederick L. Van Sickle, Lackawanna County, elected alternate-designate for 1923 and 1924; J. Newton Hunsberger, Montgomery County, elected alternate at large for 1922 and 1923; William A. Womer, Lawrence County; John M. Cooley, Armstrong County; Albert E. Blackburn, Philadelphia County; and Walter F. Enfield, Bedford County, *appointed* by the President and Secretary.

J. NEWTON HUNSBERGER, *Chairman,*
WALTER F. DONALDSON, *Clerk.*

REPORTS OF COMMITTEES

COMMITTEE ON PUBLIC HEALTH LEGISLATION

To the President and House of Delegates:

The Committee on Public Health Legislation, appointed by President Litchfield, organized and united with the Committee of the Homeopathic Medical Society and the Eclectic Medical Society and continued the Medical Legislative Conference of Pennsylvania.

The 1923 session of the Legislature was an extremely busy one. Numerous bills were introduced, a detailed account of which was furnished to each member of the several societies through the bulletins issued by the Conference. The various bills were opposed or endorsed, according to the decision of the Conference.

It is very evident from advice received that Compulsory Health Insurance will again be brought to the fore and every effort made to have it established in Pennsylvania.

The Conference wishes to urge every member of the medical profession to register on registration day and take part at the primary election.

The county societies should invite the candidates for the Legislature to their meetings and discuss with them the stand the profession will take on all measures pertaining to the health and welfare of the people of the commonwealth. With the united medical profession strongly welded for the enactment of good public health legislation, much can be accomplished in Pennsylvania that should place our state among the leaders.

The Conference desires to thank the profession in general and also the Committees on Public Health Legislation of the various county societies for their help during the past session of the Legislature.

G. A. KNOWLES, *Chairman.*

COMMITTEE ON DEFENSE OF MEDICAL RESEARCH

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC HEALTH LEGISLATION)

To the President and House of Delegates:

During the past year our Committee coöperated with the Allegheny County Medical Society and the Academy of Science and Art of Pittsburgh in presenting to the general public a lecture by Mr. Ernest Harold Baynes on "The Truth About Vivisection," on February 1, 1923.

We coöperated with the Medical Legislative Conference of Pennsylvania in the defeat in the 1923 Pennsylvania Legislature of a bill opposing compulsory vaccination against smallpox.

Respectfully submitted,

JAMES D. HEARD, *Chairman,*
L. M. HARTMAN,
JOSHUA E. SWEET.

COMMITTEE ON PROMOTION OF EFFICIENT LAWS ON INSANITY

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC HEALTH LEGISLATION)

To the President and House of Delegates:

The committee secured copies of all bills relating to the subject of insanity as they were presented during

the past session and were painstaking in presenting their views to the members of the Legislature upon the bills thus considered as the result of such study, and attended several hearings before the various committees.

The committee gave its active support to the measures introduced by the Bureau of Mental Health of the Department of Public Welfare. The principal bills presented by the department were passed, including a bill changing the practice of the insanity law, which has made material modifications in methods of commitment and general care of the insane. This bill contains many of the provisions of the Steedle Bill presented for the consideration of a former Legislature and its provisions are in keeping with the best practice in other states.

The committee worked for the passage of a bill providing for $6.00 per week maintenance rate for the indigent insane in hospitals for the acute insane. This bill was passed by both houses, but the amount available for the hospitals was materially reduced as a result of the retrenchment policy of the present administration. To conduct the hospitals within the amount now available for the hospitals will require the most stringent reduction of expenses that can possibly be effected, and the effect in reduction of personnel beyond the point requisite for proper conduct of the hospitals will have a serious result upon its operations. Ordinary repairs, upkeep of equipment, will, together with other running expenses, be necessarily greatly reduced. The committee in this statement can merely express its hope that the next Legislature may find ample funds for the proper medical conduct, maintenance and development of its State Hospitals for the Insane.

The committee desires to express its grateful appreciation for the attention given its requests by members of the Legislature, and especially the support given its work through activities of the Medical Legislative Conference.

Respectfully submitted,

Harry W. Mitchell, *Chairman,*
Owen Copp,
Edward E. Mayer,
J. Allen Jackson.

COMMITTEE ON PUBLIC RELATIONS

To the President and House of Delegates:

A major function of the Committee on Public Relations is so to coördinate and utilize the great power of the State Medical Society and its constituent units that not only may the public be safeguarded against preventable morbidity and mortality, but that organized medicine may be given credit for the major part it plays in the accomplishment of this end.

The practical application of this broad formulation calls for: 1. A specific and detailed plan of action against at least one public health menace—a plan with which the whole profession is in accord—a plan which insures successful results. 2. Wide publicity in the name of the state and local societies, telling every Pennsylvania citizen of this plan, and telling him what he should do to make it effective.

Diphtheria was selected as a public health menace, preventable and curable by methods standardized by the medical profession. Publicity was inaugurated by a Diphtheria Week campaign, well organized and effectively carried out in most of the municipalities of the state; continued, not only by the press, but by the schools, the churches, organized labor, the Legion, municipal authorities, Red Cross, Antituberculosis Society, Rotary and Kiwanis Clubs, and many other civic, business and welfare organizations.

The State Department of Health, through Dr. Charles Miner and Dr. Bruce McCreary, are in full sympathy with these activities, and have thrown their field and office force into the campaign of both publicity and active immunization. More than five million people have been reached in a convincing way and the latest statistics on diptheria suggest that convincing results may be expected.

Respectfully submitted,

Frederick L. Van Sickle,
Wilmer Krusen,
S. R. Haythorn,
W. M. Bortz,
Frank G. Hartman.
Francis J. Dever,
Elliott Edie,
J. Norman Henry,
Edward Martin, *Chairman.*

COMMISSION ON CANCER

(subsidiary to the committee on public relations)

To the President and House of Delegates:

The meeting of the Commission on Cancer was held during the annual session of the Society in 1922, in Scranton. Inasmuch as the national association is so active in general publicity, it was decided that no new public work should be undertaken by our Commission, but that they should coöperate at every opportunity with the work of the national society in this state.

It was further decided, however, to undertake a statistical study of the cancer question in the state this year. This work is now being actively pushed. The collection of statistical material will occupy the entire calendar year and it is hoped that an interesting and valuable special report may be made later.

J. M. Wainwright, *Chairman,*
R. J. Behan,
Fred Fisher,
Harry H. Penrod,
Edw. A. Weiss,
C. Y. White,
Henry D. Jump.

COMMITTEE ON MEDICAL BENEVOLENCE

To the President and House of Delegates:

Since our last report one of the beneficiaries has ceased to need assistance from the benevolence fund; one new case has been given assistance throughout most of the year; and a small amount was given another physician in a special emergency. There are, therefore, but two members of the Society regularly receiving assistance from the fund. There has been some annoying delay due to the fact that the treasurer of the State Society has not promptly placed funds for the use of this committee in the hands of the treasurer of the committee. We hope this matter has been remedied.

We desire again to call the attention of the members of the Society to the existence of this fund, and while not encouraging improper applications for assistance, we believe there are members in need of help who hesitate to apply for it because it seems like accepting charity. This is not really the case; it is merely paying back to members of the Society the funds which they have contributed to it during a long series of years.

Respectfully submitted,
William T. Sharpless, Chairman.

Receipts

Balance in bank, Aug. 5, 1922	$80.55	
Received from treasurer, Nov. 22, 1922	378.66	
Received from treasurer, June 26, 1923	332.46	
		$791.67

Disbursements

Nov. 23, 1922	$120.00	
Jan. 6, 1923	120.00	
March 1, 1923	60.00	
April 12, 1923	120.00	
May 29, 1923	20.00	
July 5, 1923	120.00	
		560.00
Balance in bank, Aug. 5, 1923		$231.67

Respectfully submitted,
E. B. HECKEL, Treasurer.

COMMITTEE ON ARCHIVES

During the past year the Committee on Archives has inaugurated plans for completing the files of published transactions in the Secretary's Office, from 1881 to date.

We have filed in our space in the Harrisburg office, a copy of the War Memorial of the Allegheny County Medical Society. This published report is entirely in keeping with the dignified and magnificent form in which the Allegheny County Medical Society has perpetuated the World War service of four hundred and fifty of its members.

We note with pleasure that the Philadelphia, Mercer, and Fayette County Medical Societies have committees actively at work upon the history of their respective societies.

We repeat our statement of last year's report to the effect that "if the older men of our Society do not take the proper interest in the history of medicine, our young men will lose much of the higher inspiration for the fullest development of our calling."

It is with great regret that the surviving members of this Committee note, since our last annual report, the death of our fellow-member, Doctor C. L. Stevens. Doctor Stevens might in truth be called the "Nestor" of our archives, he having, during his twenty-one years as Secretary of our Society, sustained a lively interest in the preservation of our records.

WALTER F. DONALDSON, *Chairman*,
SAMUEL GERHARD.

PROPOSED AMENDMENT TO CONSTITUTION*

A member of this Society who has been a member for a continuous term of fifteen years, who is not less than sixty-five years of age, may on request of his component county medical society, be made an Affiliate Member provided he holds such membership in his component society as shall relieve him from the payment of dues in his component society. A component society shall not be required to pay any annual assessment for an Affiliate Member. Affiliate Members shall be privileged to participate in the scientific discussion of this Society; they shall not receive the JOURNAL of the Medical Society of the State of Pennsylvania, except by personal subscription; nor shall they be entitled to any benefit from the Medical Defense Fund.

* Published in the June, 1923, number of the ATLANTIC MEDICAL JOURNAL.

Dr. O. Pine queries: Why so much uproar about the cancer mortality, the pneumonia mortality, and the tuberculosis mortality? Is not the automobile mortality rapidly diminishing all other mortality statistics?

BUBBLES

Apropos the old rhyme—big fleas have smaller fleas to bite 'em and so on ad infinitum—we hear that the government is importing a critter said to be the natural enemy of the Japanese beetle. Wouldn't it be a grand and glorious feeling if we could just find the natural enemy of the many germs that prey on mankind!

Up to the present we have left the treating of sick souls largely to the preachers. Somebody has certainly missed an opportunity to develop another medical specialty.

This is an age of spiritual ague. If we arn't rushing feverishly around we are suffering from cold feet lest we won't be able to raise the dough to pay for some more rushing around.

The fellow who despises the gang is often the one who lacks the brains or the gumption to get admitted himself.

Everyone has some of the milk of human kindness in his formula, but in some cases it seems to be dry milk.

Wanted: Some system of therapy capable of adjusting the international relations.

In the olden days many a man owed his life to his horse; now many a man owes his death to his car.

The advertisers who howl the loudest about nobody reading their ads., are usually the ones whose ads. are not worth reading.

If you want the world to be your oyster, you first have to learn how to open its shell.

Solomon has glorified the ant and its industry, but so far as we know, no one yet has sung a ballad to the mosquito and its persistence.

Always get the other fellow's goat before he butts you.

Constant dropping may wear away a stone, but not so with humans; constant prodding makes a callous.

Some men have good ideas but they express them so poorly that they remind us of a beautiful girl wearing a ragged dress.

Somebody ought to discover a method of sensitizing public officials to the protein of public opinion, with its accompanying anaphylactic reaction.

While the Session may be dry in one sense, you may be sure it won't be in the other sense.

The best way to induce the members to visit the commercial exhibit would be to put up a sign "No Admittance."

News dispatches tell us that Dr. Banting, discoverer of Insulin, is the most heavily insured man in the world, being insured for $5,000,000. Makes us feel more prosperous just to have him coming to our Session!

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

THE ORGANIC BASIS OF THE PSYCHOSIS*

D. J. McCARTHY, M.D.

PHILADELPHIA, PA.

In a study of the physical basis of mental disease we have to consider that first, the critical periods of life are: (a) the prenatal period, (b) the birth period, (c) the developmental period to the 4th year, (d) the adolescent period, (e) the menopause period, (f) the senile period; second, the continuing constructive periods are: (a) that of growth, (b) that of maturity, (c) that of decline.

In a consideration of the physical, or more properly the physico-toxic factors, as a basis for insanity and the insane states, the physiological mechanism of birth and development and decay become of great importance.

If we study a classification of psychoses, we may divide them into those with an inherited taint and those free from a history of insanity in the immediate ancestry. We may further divide these into three groups: (a) the organic, (b) the toxic, and (c) the combination of these two.

There is a growing tendency, accepted by a large number of psychiatrists to consider heredity as sensitizing the individual to the effect of toxic or organic changes; in other words, that in the unbalanced it takes but a small quantity of toxin to produce a mental effect, but that an identical or allied mental state would be produced by a massive dose of this toxin in a normal taint-free brain. This is shown in the dementia præcox group, where the statisticians, show a history of insanity in less than 50% of the cases, and yet this is the one disease that fills our institutions for the insane.

In studying the organic and toxic basis grouping, we would find under organic, the idiots, imbeciles, the dementias due to brain tumors, brain fractures, cerebral hemorrhage, thrombosis and embolism, etc.

In the pure toxic group we would find the acute alcoholic and lead insanity states, and possibly the acute manias and melancholias.

When we study the last grouping of the insanities we are forced to consider them as of mixed toxic and organic basis as follows:

(a) Infectious exhaustion psychosis, where in addition to the direct toxic action of the infection there is evidence of damage to the structures of the heart, kidney, liver, brain, endocrine system, etc.

(b) Alcoholic psychosis (other than acute delirium) shows disease of kidneys, liver, gastro-intestinal tract, circulatory, endocrine systems, etc., and eventually gross and microscopic damage to the brain.

(c) Paresis. Here we have in addition to the gross and microscopic changes in the brain, the multiform intoxications from syphilis and disease of the circulatory apparatus, the kidneys, liver, etc.

(d) Dementia præcox, admitted to be for a large part a toxic process, there is practically always an organic or organic-toxic factor present, even in the degenerative groups.

(e) Involutional melancholia — a disease of involutions with chronic intoxication as some obscure simple or multiple organic basis.

(f) Senile psychosis — due to the combined factors of arterio-sclerosis with an added intoxication from the kidneys and at times the liver and other organs, with a cerebral anemia, edema and atrophy.

(g) Paranoia. The pure insanity if carefully studied will often show an organic basis with secondary chronic toxemia added to the already congenitally cracked brain.

It is hardly worth while to do more here than mention the acute psychosis developing in perfectly normal people as a result of acute kidney intoxication, liver disease, cardiac failure, cerebral anemia after hemorrhage, etc., or that other extensive group of acute and at times continuing delirium of the acute infections such as typhoid, influenza, lethargic encephalitis, syphilis, tuberculosis, etc. The psychosis of the puerperium, the lactation period, and the menopause are also a group of mild toxic and endocrine-toxic origin. All these conditions may

* Read before the Medical Society of Delaware, Dover, October 10, 1922. Professor of Medical Jurisprudence, University of Pennsylvania. Neurologist to St. Agnes Hospital.

occur in normal individuals with good heredity, and quite as frequently as in those with a history of insanity in the immediate ancestry.

It is quite true that in these groups the sensitized unbalanced brain is in greater danger of disturbance and damage than is the normal brain. We should, however, keep in mind that the brain is an organ of registration of thought, so to speak. It depends for its normal functioning on the blood, and the blood for its cerebral nutritional qualities on the normal function of the liver, gastro-intestinal tract, kidneys, bone marrow, lungs, and the endocrine mechanism. If any of these be deranged we have an abnormal functioning of the brain, and when it comes to the production of thought, a change in the output depending on the viscereal disease and the resultant toxemia; and so it is not only with quality but equally so with quantity of the blood. The anemic states have their own thought pictures.

In every case of insanity it is the duty of the doctor to elicit and evaluate two factors: (a) To what degree is the brain sensitized by heredity or chronic intoxication or vascular disease? (b) What is the toxin at work to produce this particular form of mental derangement. The former is a matter of history of the testing of mental and physical reflexes; the latter a problem of advanced internal medicine—a study not only of disease of organs but of derangement of insufficient or inefficient functioning of organs not cellularly involved or diseased.

I am not sure that the cellular pathology of Virchow has not done more to impede the progress of medicine than any particular value it gave to it. There is no question that people die of functional derangement of the kidneys or liver or heart or brain when the cells show absolutely no change under the highest powers of the microscope. There is no question that people go insane and stay insane as a result of functional derangement of the kidneys, heart, etc. There is no question that chronic incapacitating illness is not infrequently the result of pure functional derangement of the various viscera. So that we now are developing a new concept of medicine in two directions:

(a) Has the individual a cholecystitis? If so, why does he have it? Where did it come from? What was the point of infection and why? If it can produce an acute abscess, what is the use of removing the abscess, if we leave the source of it to do damage elsewhere? And so it is with pathological conditions of the thyroid, of the kidneys, etc.

(b) And in the other direction—Is this man not in vigorous working health? If so, why not? Has he organic diseases? No. Well and good. Then why is he sick? Or rather, why is he not well? There must be a malfunctioning of some or all of his tissues and it is the duty of the doctor to find it and eliminate it.

In order to do this it is often necessary not only to study the present status of the patient, but to go back to birth or even to the antenatal period and estimate the effect of disease at the critical period or subsequent periods. If we try to understand a disease like dementia præcox it is necessary in the various groups to make such a study. In the infectious-toxic group based on pulmonary disease, an analysis of the study and reasoning will give us a conception of a study of a case somewhat different from the usual clinical summary.

(Concluded in the October JOURNAL*)*

EDITORIALS

THE MIGRATORY CONSUMPTIVE

One can hardly conceive of a more cruel, inhuman act than to send an indigent consumptive adrift to the South-West to chase the elusive rainbow of health, and yet thousands of them migrate to Colorado, Texas, Arizona and California on the advice of physicians. Picture the pathetic figure of a poor consumptive, in the throes of this dread disease, yet with a gleam of hope that the "climate" will perform the miracle and restore him to health. With his meagre belongings and the last dollar spent on railroad fare, he lands in Colorado Springs, Denver, El Paso, San Antonio, Phœnix or Los Angeles only to find that the cheap, insanitary lodgings, poor food and lack of ordinary comforts are aggravating his condition. His cough is more harassing, his fever more consuming, his digestion more impaired, his body wasting from day to day. Helpless, homesick and destitute, he applies to some charitable organization only to find that the assistance he can receive is small and inadequate and that the institutions which take care of consumptives are overcrowded, with a long waiting list. In one year, 1920, according to statistics compiled by Jessamine S. Whitney, Statistician of the National Tuberculosis Association, 7,319 consumptives were cared for by municipal agencies in six cities of the South-West, or an average of one indigent consumptive to every 155 inhabitants. A few of these cities are worse off than others. In Phœnix there was found one indigent consumptive to every 58 of the population; in Colorado Springs, one to every 78; in El Paso, one to

every 71; in Denver, one to every 156; in Los Angeles, one to every 186; and in San Antonio, one to every 264.

Aside from the enormous and unjust burden imposed upon these communities that are obliged to care for the indigent consumptives from other states, there is a medical aspect to this problem which should be considered by the physician who recommends a change of climate. The essentials of treatment of tuberculosis are: First, rest; second, sufficient nourishing food; and third, fresh air. Favorable climatic conditions make an outdoor life more possible and agreeable, but do not replace the rest and food. How much rest can a consumptive get when he is obliged to look for his daily sustenance either by getting odd and unremunerative jobs or by "hand-outs" from charitable organizations? How much food can he get on his meagre allowance? How much fresh air can he get in lodging houses made up of windowless "cubicles" as are found, for instance, in Denver? What chance of recovery or even improvement has a poor consumptive when placed under such extremely unfavorable conditions?

These are the questions the doctor should ask himself before advising the poor consumptive to "go West." A. R.

134th ANNUAL SESSION

The 134th Annual Session of the Medical Society of Delaware will be held at Middletown on Monday and Tuesday, October 8th and 9th, 1923, under the Presidency of Dr. Dorsey W. Lewis, of Middletown. Those of us who have attended other meetings in Middletown know what excellent hosts are to be found there, and as we expect an unusually fine scientific program, all who will take the trouble to attend the meeting will be amply rewarded. We would like this session to break all records for attendance and for the number and quality of the papers read. The program, unfortunately, is not yet completed, and there is still an opportunity for those who desire to present papers to do so, but it is requested that all such get in touch with the secretary, Dr. LaMotte, at once. We are most anxious that the majority of our papers be presented by our own men; we consider it a serious reflection when we are compelled to call on a number of guests to complete a creditable program. Please bear the dates in mind, and be there; better still, arrange to read a paper.

ANNUAL DUES

The state secretary advises us that there are several of the members who have not as yet paid their dues for 1923. Of course, such members have lost their medical defense, and will not be included in the mailing lists of this Journal after the October number, unless all indebtedness is paid; further, they will have no vote in the election of the next President, a privilege one should cherish. But the two most important effects of this kind of carelessness are: (1) No county delegation can be seated in the House of Delegates unless and until the per capita assessment of four dollars has been paid into the state treasury thirty days before the annual session. We hope there will be no repetition of the misunderstanding of last year on this point. (2) The funds of the treasury will not be sufficient to pay the per capita assessment of two dollars for this Journal, and when the Pennsylvania Society calls upon us for this money we do not want to ask them for additional time. Our society is much older than theirs, a half a century older, and our pride should be accordingly greater. Please see to it that there is no failing on this point of finances; the publication expenses are due and payable to the Pennsylvania Society on October 1st.

STATE LAWS

One of the most important business matters to come up at the next House of Delegates will be the question of instituting a test case in the Delaware courts to determine the constitutionality of the state laws prohibiting the prescribing of alcoholic medicinals. The precedent has been set by physicians of New York, and they have won their case. Let every member consider this very important matter impartially, and at the next meeting of each county society there should be issued to each delegate and to each delegation definite instructions on this point.

CORRESPONDENTS

There have been appointed twelve correspondents throughout the state, whose duty it is to send to the editor of the Delaware section each month such items of a professional, personal, institutional or political character as may be of general interest to the profession of the state. So far only *one* man has been sufficiently conscientious or considerate to perform this duty, and he is about as busy as the next one. Being "too busy" is all humbug; being too indifferent is more like it. Come on, boys, speed up.

W. E. B.

LITTLE JOURNEYS IN GENERAL PRACTICE

(BEING A FEW SIDE VISITS TO VARIOUS HILLS AND VALLEYS AND BYROADS IN THE AVERAGE DOCTOR'S TRAVEL THROUGH LIFE AND EXPERIENCE)

BY A GENERAL PRACTITIONER

PROLOGUE

Dear Mr. Editor:

I wish particularly to call your attention to several facts before I start my little series of—let us call them "unprofessional monographs."

I am a general practitioner—one from a small town at that. I lay no claim to specialism in any line, unless it be that of general medicine, general surgery, gynecology, diseases of children, ear, nose and throat, electrotherapeutics, etc. I do, however, claim that I can cut out a patient's appendix as readily as I can give him a dose of calomel; and I have ofttimes been called upon to deliver a woman in labor that some "big man" from the city has "given up" as a hopeless case.

Being a "general physician" in a rural or town community, I do everything in the medical line, except to pull teeth, pare corns and act as midwife after a baby has been delivered. Therefore, I feel justified in "saying a few things" about our profession and its specialists, internists, surgeons, diagnosticians, etc., for I am all of them combined in one to a certain degree.

If the readers of the ATLANTIC MEDICAL JOURNAL object to some of my "unprofessional statements" as uncalled for or jocular, please remember that I have spent two terms abroad (in Europe) and that I have met many of my professional brethren in all kinds of predicaments, both here and across the water. Also I am a student of human nature, and realize that no priest of the Church has ever done as much for humanity as the doctor. It is all right to call a Christian minister in time, just before you are ready to depart from this world for the next, but you call the doctor at any old time, be he a good one, a great specialist or a plain general practitioner like myself.

BOMBASTISM

It has been my fortune, or misfortune, on several occasions to be forced to call into consultation a "noted specialist" or a well-known physician of some other town or community.

I have received the visiting consultant as a brother. I have welcomed him as a man to help deliver me and my patient's family from a troublesome situation. I have done all I can possibly think of or, after hours of book study, suggest. The great Doctor Blank is called upon.

If Dr. Blank were a human being he would readily see at a glance that the patient is far beyond human help. He could examine the patient, advise with the family physician, and tell the waiting friends that the case is hopeless, everything possible has already been done, etc., etc., beyond measure—the old orthodox formula.

But no, the new, up-to-date consultant says something after this fashion, "My God! Why was I not called sooner?" He takes the family doctor into another room and asks how much the patient is worth in Liberty Bonds or real estate. He then says, "You stay here; let me talk to them."

He presents himself to the expectant waiting relatives and friends, and unbuttons his mental vest of the following:

"Dr. Dash has done all possible in his power. He is a general practitioner. He does not understand the minute, critical points of a case such as this. I believe that had I been called sooner something might have been done. As it is, I will leave the case to Dr. Dash, who is really doing all he can. The patient is beyond all hope. I have suggested several treatments Dr. Dash can give, but I fear it is too late. However, even though I am a very, very busy man, I am at your service. Call me if your patient does not recover. If he does get better, you must thank Dr. Dash for following out my suggested treatment."

Does this sound somewhat exaggerated to you? Well, it isn't. The said Dr. Blank enters the household in a most pompous manner. He is super-dignified. He is autocratic. He shows to the simplest onlooker that he is an authority! If the patient lives—Dr. Dash "followed his suggestions!

Dr. Dash may collect part of his fee in either case. Dr. Blank collects his super-fee before he leaves the house, under any conditions.

Who is the real helper in this case, the poor, lowly, average family doctor, or the big, puffy, powerful specialist who is called in consultation?

I've had many little journeys like this; perhaps have collected $25.00, signed the insurance blanks, death certificates, etc. Doctor Blank got $150.00, looked pompous and big, had a good lunch and a nice ride, and avoided all subsequent annoyances. Bombast!

Dr. O. Pine queries: As certain phrasemongers assure us that 90% of all illnesses recover without medical assistance, and as, after listening to the claims of various specialists, it is very evident that the portions of the remaining 10% that escape death owe their salvation to the specialists, can you wonder that the mere physician is approaching alleged extinction?

THE PENNSYLVANIA MEDICAL JOURNAL

OCTOBER, 1922—MARCH, 1923

AND

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APRIL—SEPTEMBER, 1923

REPRESENTING

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

AT ITS ANNUAL SESSION HELD AT

SCRANTON, PA., OCTOBER, 1922

AND

TRANSACTIONS OF THE MEDICAL SOCIETY OF DELAWARE

AT ITS ANNUAL SESSION HELD AT

DOVER, DELAWARE, OCTOBER, 1922

VOLUME LII

(VOLUME XXVI OF THE JOURNAL)

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BY

FREDERICK L. VAN SICKLE, M. D.
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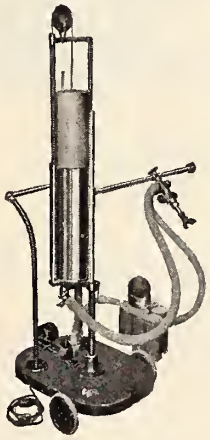
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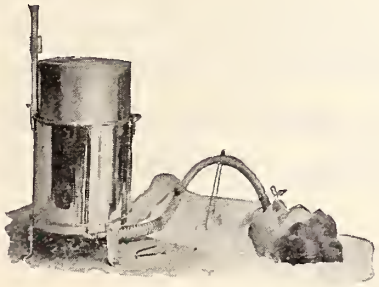
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BOOKS RECEIVED

PHYSIOTHERAPY TECHNIC. A Manual of Applied Physics. By C. M. Sampson, M.D., formerly of the Physiotherapy Service, Walter Reed U. S. Army General Hospital, Washington, D. C., etc. With eighty-five illustrations. St. Louis: C. V. Mosby Company, 1923. Price $6.50.

NATIONAL CELEBRATION of the Centenary of the Birth of Louis Pasteur, Philadelphia, Pa., December 27, 1922.

PRACTICAL DIETETICS WITH REFERENCE TO DIET IN HEALTH AND DISEASE. By Alida Frances Pattee, Graduate, Department of Household Arts, State Normal School, Framingham, Mass.; former instructor in dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City, etc. Fourteenth edition completely revised. A. F. Pattee, Publisher, Mount Vernon, New York, 1923. Price $2.60 net.

EXCURSIONS INTO SURGICAL SUBJECTS. By John B. Deaver, M.D., Emeritus Professor of Surgery, University of Pennsylvania; Surgeon-in-Chief, Lankenau Hospital, Philadelphia; and Stanley P. Rieman, M.D., Assistant Professor of Experimental Pathology, University of Pennsylvania; Chief of the Department of Pathology and Bacteriology, Lankenau Hospital, Philadelphia. Octavo volume of 188 pages and 30 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $4.50 net.

PAPERS FROM THE MAYO FOUNDATION for Medical Education and Research and the Graduate School of Medicine of the University of Minnesota, covering the period of 1920-1922. Octavo volume of 716 pages with 257 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $10.00 net.

HEART RECORDS. Their Interpretation and Preparation. By S. Calvin Smith, M.S., M.D., Philadelphia. Containing 126 original illustrations. Philadelphia: F. A. Davis Company, Publishers, 1923. Price $7.00.

CURES. The Story of the Cures that Fail. By James J. Walsh, M.D., Ph.D., Sc.D., Professor of Physiological Psychology, Cathedral College and College of the Sacred Heart (Manhattanville), New York City; Extension Professor, Fordham University; etc. D. Appleton and Company: New York and London, 1923. Price $2.00.

THE SURGICAL CLINICS OF NORTH AMERICA, August, 1923. Volume 3, No. 4 (Chicago Number). Published bi-monthly. Philadelphia and London: W. B. Saunders Company.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA, San Francisco Number, May, 1923. Index Number, Vol. 6, No. 6. Philadelphia and London: W. B. Saunders Co.

A mere recital of the titles of the papers in this volume of the Clinics will indicate the practical character of the subjects discussed: Gall-stones, by Dr. W. F. Cheney; Quinine-Derivatives in the Prevention and Treatment of Cardiac Irregularities, by Drs. W. J. Kerr and E. L. Bruck; Pyloric Stenosis, by Dr. W. P. Lucas; Thick Cereal Feeding in Infancy, by Drs. L. Porter and C. F. Geiston; Botulism, by Dr. E. C. Dickson; Cardiac Neuroses, by Dr. E. S. Kilgore; Oxyuris Incognita, by Drs. A. C. Reed, H. A. Wyckoff, and C. C. Pringle; Severe Anemia, by Drs. E. H. Falconer and L. M. Morris; Dyspituitarism and Epilepsy, by Drs. H. Lisser and C. E. Nixon; Fever as a Symptom of Visceral Cancer, by Dr. L. H. Briggs; Glioma of the Spinal Cord, by Dr. R. W. Harvey;

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Hereditary Myxedema, by Dr. G. E. Ebright; Post-influenzal Lung-Conditions, by Dr. P. H. Pierson; the Goetsch Test, by Drs. J. M. Read and R. S. Hiatt; Recurrent Manifestations of Secondary Syphilis Following Inadequate Treatment, by Dr. H. E. Miller; Rheumatic Endocarditis, by Dr. G. E. Hein; Psychotherapy of Post-traumatic Neuroses, by Dr. J. Catton; The Technic of Stool-Examination, by Dr. M. C. Cheney; Radium Treatment of Carcinoma of the Lip, by Dr. L. Taussig; Chronic Aortitis, by Dr. H. Spiro. An index of the subjects discussed in Volume 6 is included. A. A. E.

THE MEDICAL CLINICS OF NORTH AMERICA, July, 1923, Mayo Clinic Number. Volume 7, Number 1. Philadelphia and London: W. B. Saunders Co.

This volume of the Clinics has a particular and timely interest in that it contains a series of articles dealing with the treatment of diabetes with insulin. Dr. R. M. Wilder describes insulin, its method of production and its mode of application. Dr. S. F. Adams discusses food mixtures for diabetic patients receiving insulin. Dr. C. J. Barborka describes the actual procedures employed in the treatment of patients requiring insulin. Drs. W. M. Boothby and Wilder furnish a preliminary report of the effects produced by insulin on the rate of heat production.

There are other articles dealing with a diversified range of subjects, as follows: Stricture of the Esophagus Following Typhoid Fever, by Dr. P. P. Vinson; Kymographic Studies of Various Pathological Conditions of the Stomach, by Drs. L. J. Hardt and E. G. Joseph; Intermittent Duodenal Obstruction in Children, by Dr. H. O. Foucar; Jaundice in Surgical Cholecystitis Without Stones, by Dr. H. R. Hartman; Duodenal Enzymes in Chronic Ulcerative Colitis, by Dr. P. W. Brown; Chronic Ulcerative Colitis Cured by Iodin, by Dr. A. H. Logan; Proctoscopic Examination, by Dr. L. A. Buie; (1) Salivary Urea and the Mercury-Combining Power of Saliva, and (2) A New and Simple Index of Renal Insufficiency, by Dr. P. S. Hench; Acute Renal Insufficiency Following Major Surgical Operations, by Drs. C. W. Barrier and N. M. Keith; Duplication of the Renal Pelvis and Ureter, by Dr. H. C. Bumpus, Jr.; Enuresis in Children, by Dr. S. Amberg; Inoperable Cancer of the Breast Treated by Roentgen Rays, by Dr. A. U. Desjardins; (1) Adenocarcinoma of the Ovary and Tube with Tuberculosis, (2) Fibroma in the Hernial Sac, and (3) Solid Carcinoma of the Left Ovary, by Drs. L. J. Stacy and O. C. Melson; The Treatment of Chronic Addison's Disease, by Dr. L. G. Rowntree; The Heart in Exophthalmic Goiter and Adenoma with Hyperthyroidism, by Drs. F. A. Willius, W. M. Boothby and L. B. Wilson; Malignant Hypertension, by Dr. G. E. Brown; Radium and Roentgen Ray Treatment of Chronic Lymphatic and Myelocytic Leukemia, by Dr. H. H. Bowing; Hemorrhagic Purpura, by Drs. H. Z. Giffin and J. K. Holloway; Trypanosomiasis, by Dr. T. B. Magath; Heredosyphilis, by Dr. J. H. Stokes; Renal Arteriosclerosis, by Dr. H. P. Wagner; Glossopharyngeal Neuralgia, by Dr. J. B. Doyle; Lesions Affecting the Vagus Nerve, by Dr. W. S. Lemon; Involvement of the Nervous System in Malignant Disease of the Nasopharynx, by Dr. H. W. Woltman.
A. A. E.

GOEPP, "MEDICAL STATE BOARD QUESTIONS AND ANSWERS," Fifth Edition. Philadelphia: W. B. Saunders & Co. Price $6.00 net.

Dr. Goepp has improved upon previous editions of this book. As noted in the preface of this edition, "The most essential developments in the last few years and those which may be expected to furnish new ques-

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The Annual Membership List of the Medical Society of the State of Pennsylvania was published in pamphlet form during the month of August. Orders for this list should be entered promptly, as only a limited number were printed. Copies may be obtained by approved firms and individuals for $2.00 each. Order and check should be sent to THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, 230 State St., Harrisburg, Pa.

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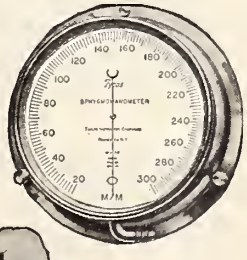
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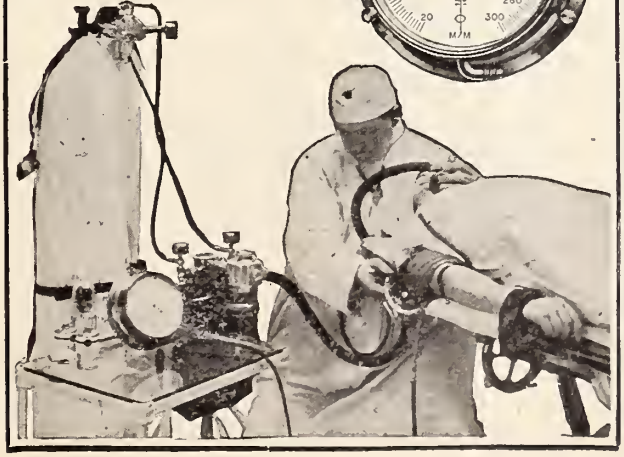
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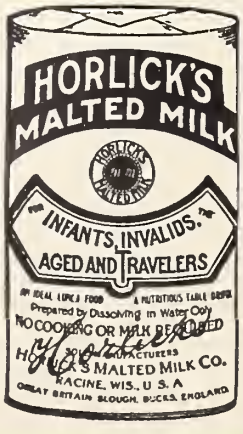
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BOOK REVIEWS

(Concluded from page xvi)

tions in the course of the next year or two have been included."

There is no discussion of insulin, toxin-antitoxin, the endocrines, or colloidal gold test, as a few of the leading subjects for present day discussion. However, the book fulfills the object for which it has been presented, that of convenient, rapid review of subjects or individual topics. It, of course, is well understood that it must not be used as a predigested textbook as a short cut to medical knowledge. A. C. M.

I BELIEVE IN GOD AND IN EVOLUTION, by W. W. Keen, M.D.

This book, coming from the fruitful mind of the author, a man who stands preëminantly at the head of his profession as a surgeon and teacher as well as a Christian gentleman, who has followed his Lord and Master in the commands set forth in that Book of books, The Holy Bible, a man who has been a close student of nature and nature's God—brings to us the results of observations and studies in evolution, and leads the reader's mind, step by step, through the many advances and changes that have taken place in the animal and vegetable kingdoms.

There may be portions of the book that the reader may not comprehend nor agree with, but if read with the same interpretation and on the same Christian basis that the author gives his conclusions, it will lead him from the misty cobwebs of superstition and false teaching of so many things in and about us, into the skylight of God and the wonderful possibilities of the work of his creation. J. B. F. W.

CEREBROSPINAL FLUID IN HEALTH AND IN DISEASE, by A. Levinson, B.S., M.D. Associate in Pediatrics, Northwestern University Medical School. Second edition, 267 pages, 69 illustrations, including five color plates, thoroughly revised. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

This is a very valuable contribution and epitome of our knowledge of the cerebrospinal fluid. The second edition of a good work is always very valuable, as the author is able to profit by friendly criticism, advancement in knowledge and further study of the literature pertaining to his special subject.

The bibliography in this monograph is to be commended. The observations made by the author constitute a safe guide in this intricate subject.

We would recommend enlargement of the chapter on "Treatment" as well as its addition to the index.

All hospitals, library workers, teachers and clinicians, should have this book. A. C. M.

OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION, by W. A. Fisher, M.D., F.A.C.S., Professor of Ophthalmology in the Chicago Eye, Ear, Nose and Throat College. 12mo, 232 pages, 200 illustrations, 24 colored plates. Chicago: W. A. Fisher, M.D.

As an introduction to the contemplated practice of ophthalmology this work of Dr. Fisher will be appreciated by students and general practitioners. It is, for a volume of 232 pages, well and profusely illustrated and contains a very helpful separate sheet of colored plates for use with a schematic eye. It has been written with the idea of driving home by short, terse and dogmatic statements, ophthalmological principles and the author's method of technique in the observation and examination of patients. It is rather difficult to concede that ophthalmologists would not take issue with the author in his statement that "Ophthalmoscopy and the fitting of glasses belong to the general practitioner and acquirement of the necessary practical theoretical knowledge is easy, interesting and within the reach of all." This book presents in a clear, concise way the very valuable experience gained in years of teaching and is a very helpful and much needed volume. G. H. C.

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